

Delaval, Jan

700356

**From:** Roark, Jessica  
**Sent:** Monday, July 01, 2002 4:36 PM  
**To:** Delaval, Jan  
**Subject:** 09/509,283

Jan,

Please search all files for the following from 09/509,283

SEQ ID NO:2.

Results on paper please.

Thanks!

*Jessica H. Roark*

CM1 9D04  
Mailbox 9E12  
Art Unit 1644  
703 605-1209

*paper remarks*

Jan Delaval  
Reference Librarian  
Biotechnology & Chemical Library  
CM1 1E07 - 703-308-4498  
jan.delaval@uspto.gov

**THIS PAGE BLANK (USPTO)**

GenCore version 4.5  
Copyright (c) 1993 - 2000 Compugen Ltd.

OM protein - protein search, using sw model

Run on: July 1, 2002, 16:45:07 ; Search time 29.77 Seconds

(without alignments)  
742,482 Million cell updates/sec

Title: US-09-509-283b-2

Perfect score: 1082

Sequence: 1 MKSGLMYFPLFLRLRVKNG.....YMFRAVNTAKSRRLDVTL 199

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Search: 747574 seqs, 111073796 residues

Maximum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

- Database : A\_Geneseq.032802:\*
- 1: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA1980.DAT:\*
  - 2: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA1981.DAT:\*
  - 3: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA1982.DAT:\*
  - 4: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA1983.DAT:\*
  - 5: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA1984.DAT:\*
  - 6: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA1985.DAT:\*
  - 7: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA1986.DAT:\*
  - 8: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA1987.DAT:\*
  - 9: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA1988.DAT:\*
  - 10: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA1989.DAT:\*
  - 11: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA1990.DAT:\*
  - 12: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA1991.DAT:\*
  - 13: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA1992.DAT:\*
  - 14: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA1993.DAT:\*
  - 15: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA1994.DAT:\*
  - 16: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA1995.DAT:\*
  - 17: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA1996.DAT:\*
  - 18: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA1997.DAT:\*
  - 19: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA1998.DAT:\*
  - 20: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA1999.DAT:\*
  - 21: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA2000.DAT:\*
  - 22: /SIDSL/gcgdata/hold-geneseq/geneseq-emb1/AA2001.DAT:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	1082	100.0	199	19	AAW75956
2	1082	100.0	199	19	AAW75957
3	1082	100.0	199	20	AAV08026
4	1082	100.0	199	21	AAH08731
5	1082	100.0	199	22	AAE03428
6	1082	100.0	199	22	AAE03460
7	1082	100.0	199	22	AAE03525
8	1066.5	98.6	200	21	AAV92213
9	737.5	68.2	200	21	AAV92212
10	734	67.8	200	21	AAH08723
11	722.5	66.8	200	19	AAW75958

12	701	64.8	200	19	AAW71874	Rat cell surface p
13	696	64.3	216	19	AAW71875	Rat cell surface p
14	658	60.8	379	22	AAH67716	Amino acid sequenc
15	449.5	41.5	380	22	AAH67717	Amino acid sequenc
16	146.5	13.5	225	20	AAV41136	Rat CD28 protein s
17	145.5	13.4	221	21	AAV32286	Feline CD28, Fell
18	145.5	13.4	221	21	AAV32279	Cat CD28 receptor.
19	139.5	12.9	220	13	AAH20805	Human CD28 antigen
20	139.5	12.9	220	13	AAH20805	Sequence encoded b
21	139.5	12.9	220	17	AAH02131	Human CD28 cdna pr
22	139.5	12.9	220	17	AAH02131	Human CD28 antigen
23	139.5	12.9	220	18	AAH38413	Human CD28 antigen
24	138.5	12.9	220	19	AAH80442	Human CD28 antigen
25	138.5	12.9	220	20	AAH8451	Human CD28 antigen
26	139.5	12.9	220	21	AAV96128	Human cell surface
27	139.5	12.9	220	21	AAV44294	Human CD28 recepto
28	139.5	12.9	220	22	AAU02437	Human lymphocyte c
29	134	12.4	225	20	AAV41135	Mouse CD28 protein
30	126	11.6	223	20	AAV41137	Human CD28 protein
31	120.5	11.1	367	18	AAW35862	Human CD28:19G2a c
32	119.5	11.0	134	18	AAW35846	Human CD28 for use
33	119.5	11.0	152	16	AAH67706	CD28 extracellular
34	89.5	8.3	117	20	AAV24469	Human CD28 gene pr
35	89	8.2	305	22	AAH6371	Human partial olfa
36	89	8.2	319	22	AAH71916	Human olfactory re
37	89	8.2	321	22	AAH46999	Human OLFYX protel
38	87.5	8.1	213	22	AAH04561	Human G-protein co
39	87	8.0	330	8	AAV70445	Sequence of mouse
40	86	7.9	223	18	AAW25111	Soluble human CTLA
41	86	7.9	223	22	AAH66519	Human CTLA4. Homo
42	86	7.9	223	22	AAU00687	Soluble CTLA4 muta
43	85.5	7.9	187	19	AAW29728	Human secreted pro
44	84.5	7.8	209	21	AAV94998	Human CTLA-4 prote
45	84	7.8	223	21	AAV15129	

ALIGNMENTS

RESULT 1	AAW75956	AAW75956 standard; Protein: 199 AA.
ID	AAW75956	
AC	AAW75956;	
XX		
DT	11-DEC-1998 (first entry)	
XX		
DE	Human cell surface protein #1.	
XX		
KW	Human; cell surface protein; thymocyte; lymphocyte; cell adhesion;	
KW	signal transmissio; autoimmune disorder; allergy; diagnosis;	
KW	mitogen-stimulated.	
XX		
OS	Homo sapiens.	
XX		
PN	W09838216-A1.	
XX		
PD	03-SEP-1998.	
XX		
PF	27-FEB-1998; 98WO-JP00837.	
XX		
PR	26-FEB-1998; 98JP-0062217.	
XX	27-FEB-1997; 97JP-0062290.	
PA	(NLSB ) JAPAN TOBACCO INC.	
XX		
PI	Tamatani T, Tezuka K;	
XX		
DR	WPI: 1998-481144/41.	
XX	N-PSDB; AAV53198.	
PT	Cell surface molecule expressed in thymocytes and lymphocytes and -	
PT	mediating signal transmissio and cell adhesion, and antibodies to	

PT it useful in treatment of auto:immune and allergic disorders.  
XX  
PS Claim 2; Page 99-101; 149pp; Japanese.  
XX  
CC The present sequence represents a human cell surface protein which is  
CC expressed by thymocytes and by mitogen-stimulated lymphocytes. The cell  
CC surface protein induces adhesion of mitogen-stimulated lymphocytes to  
CC antibodies recognising the cell surface protein. These antibodies also  
CC produce an increase in peripheral blood lymphocytes in the presence of  
CC an antibody recognising CD3 antigen. The cell surface protein contains  
CC the amino acid sequence PDPPF in its extracellular region and the  
CC sequence YMFH in its intracellular region. The cell surface protein can  
CC be used in the prevention and treatment of autoimmune and allergic  
CC diseases, and in the diagnosis and investigation of such disorders.  
XX  
SQ Sequence 199 AA;  
  
Query Match 100.0%; Score 1082; DB 19; Length 199;  
Best Local Similarity 100.0%; Pred. No. 6.6e-116;  
Matches 199; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
QY 1 MKSLWYFELCLRIKVTGEINSGANYEMFIHNGVQILCKYPTVQOFKMLKGGQ 60  
Db 1 mksglwyfllclrlkvtlgeinssanyemfihngvqilckypdvqgikmqllk99q 60  
  
QY 61 ILCDLTKRSGNTVSIKSLKFCCHSOLSNNSVFELYNLDSHANYFCNLSIFDPPEFK 120  
Db 61 llcdltkrsgntsvsikslkfchsqslsnsvsfellynlshanyfcnlsidpppfk 120  
  
QY 121 VTLGGYHLYESQCCQKFWLPICGAFVVCILGICILCWLTKKYSVHDPNCEY 180  
Db 121 vtlggyhlyesqccqkfwlpigcaafvvcilgicilcwltkkysvhdpngey 180  
  
QY 181 MEMRAVNTAKKSRLLDVTL 199  
Db 181 mfmraavntakksrlltdvtl 199  
  
RESULT 2  
AAW75957  
ID AAW75957 standard; Protein: 199 AA.  
XX  
AC AAW75957;  
XX  
DT 11-DEC-1998 (first entry)  
XX  
KW Human cell surface protein #2.  
XX  
KW Human: cell surface protein; thymocyte; lymphocyte; cell adhesion;  
KW signal transmission; autoimmune disorder; allergy; diagnosis;  
KW mitogen-stimulated.  
XX  
OS Homo sapiens.  
XX  
PN WO9838216-A1.  
XX  
PD 03-SEP-1998.  
XX  
PE 27-FEB-1998; 98WO-JP00837.  
XX  
PR 26-FEB-1998; 98JP-0062217.  
PR 27-FEB-1997; 97JP-0062290.  
XX  
PA (NISB ) JAPAN TOBACCO INC.  
XX  
PI Tamatani T, Tezuka K;  
XX  
DR WPI, 1998-481144/41.  
XX  
DR N-PSDB; AAV53199.  
XX  
PT Cell surface molecule expressed in thymocytes and lymphocytes and -  
PT mediating signal transmission and cell adhesion, and antibodies to

PT it useful in treatment of auto:immune and allergic disorders.  
XX  
PS Claim 9; Page 101-105; 149pp; Japanese.  
XX  
CC The present sequence represents a human cell surface protein which is  
CC expressed by thymocytes and by mitogen-stimulated lymphocytes. The cell  
CC surface protein induces adhesion of mitogen-stimulated lymphocytes to  
CC antibodies recognising the cell surface protein. These antibodies also  
CC produce an increase in peripheral blood lymphocytes in the presence of  
CC an antibody recognising CD3 antigen. The cell surface protein contains  
CC the amino acid sequence PDPPF in its extracellular region and the  
CC sequence YMFH in its intracellular region. The cell surface protein can  
CC be used in the prevention and treatment of autoimmune and allergic  
CC diseases, and in the diagnosis and investigation of such disorders.  
XX  
SQ Sequence 199 AA;  
  
Query Match 100.0%; Score 1082; DB 19; Length 199;  
Best Local Similarity 100.0%; Pred. No. 6.6e-116;  
Matches 199; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
QY 1 MKSLWYFELCLRIKVTGEINSGANYEMFIHNGVQILCKYPTVQOFKMLKGGQ 60  
Db 1 mksglwyfllclrlkvtlgeinssanyemfihngvqilckypdvqgikmqllk99q 60  
  
QY 61 ILCDLTKRSGNTVSIKSLKFCCHSOLSNNSVFELYNLDSHANYFCNLSIFDPPEFK 120  
Db 61 llcdltkrsgntsvsikslkfchsqslsnsvsfellynlshanyfcnlsidpppfk 120  
  
QY 121 VTLGGYHLYESQCCQKFWLPICGAFVVCILGICILCWLTKKYSVHDPNCEY 180  
Db 121 vtlggyhlyesqccqkfwlpigcaafvvcilgicilcwltkkysvhdpngey 180  
  
QY 181 MEMRAVNTAKKSRLLDVTL 199  
Db 181 mfmraavntakksrlltdvtl 199  
  
RESULT 3  
AA08026  
ID AA08026 standard; Protein: 199 AA.  
XX  
AC AA08026;  
XX  
DT 08-JUL-1999 (first entry)  
XX  
DE Human activated T-lymphocyte protein 8F4.  
XX  
KW T-lymphocyte; human; 8F4; T cell co-stimulation; activated; CD4+; CD8+;  
KW anticancer; antiviral; anti-asthma; immunomodulator; proliferation;  
KW T cell activation; cytokine synthesis; regulatory element; B cell;  
KW T cell-dependent antibody production; treatment; prevention; cancer;  
KW autoimmune disease; transplant rejection; immune system regulation;  
KW disorder; acquired immune deficiency syndrome; AIDS; asthma.  
XX  
OS Homo sapiens.  
XX  
PN WO9915553-A2.  
XX  
PD 01-APR-1999.  
XX  
PE 23-SEP-1998; 98WO-DE02896.  
XX  
PR 11-MAY-1998; 98DE-1021060.  
PR 23-SEP-1997; 97DE-1041929.  
XX  
PA (DEKO-) DEUT KOCH INST ROBERT.  
PA (BUND ) BUNDESREPUBLIK DEUT PAUL-EHRlich-INST.  
XX  
PI Kroczeck R;  
XX  
DR WPI: 1999-276975/23.

DR N-PSDB; AAX37661.  
XX Polypeptide 8F4 co-stimulates T cells and is present only on  
PT activated cells  
XX  
PS Claim 2; Page 24; 47pp; German.  
XX This invention describes a novel human protein, 8F4, and its encoding  
CC nucleic acid which co-stimulates T cells and is present on activated CD4+  
CC and CD8+ T cells but not on resting or activated B cells, granulocytes,  
CC monocytes, natural killer or dendritic cells. 8F4 has anticancer,  
CC antiviral, anti-asthma and immunomodulatory activity. 8F4 provides a  
CC strong co-stimulatory signal for T cell activation, i.e. it amplifies  
CC proliferation of T cells, synthesis of certain cytokines and other  
CC regulatory agents, and improves T cell-dependent antibody production  
CC by B cells. Agents that inhibit 8F4 are used to treat or prevent  
CC autoimmune diseases, to prevent transplant rejection and to treat  
CC disorders of immune system regulation. 8F4, or cells that express it,  
CC is/are used to treat or prevent cancers, acquired immune deficiency  
CC syndrome, asthma and chronic infectious diseases (e.g. hepatitis B or C).  
Sequence 199 AA:  
Query Match 100.0%; Score 1082; DB 20; Length 199;  
Best Local Similarity 100.0%; Pred. No. 6.6e-116;  
Matches 199; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
QY 1 MKSGLMWYFELCLRIKVTGTGELNSANEMEFHNGVQIICKYDPDIYOQRMOLKGGQ 60  
Db 1 mksq1wylfclrlkvtgtelngsanemeflhnvgvqilckypdlyqkfmqllkxgq 60  
QY 61 ILCDLTKTKGSGNTVSIKSLKFCCHSOLSNNSVSEFLYMLDHSNANYFCNLSTDPDPFK 120  
Db 61 ilcdltkktkgsntvskslkfcchsqslsnsvsfllyldhshanyfcnlstfdppfk 120  
QY 121 VTLGGYIHYESQLCOLKFWLPYGCAFYVVCILGCIILCWLTKKRYSSVHPDNGEY 180  
Db 121 vtlggylhyesqlcqlkfwlpigcaafvvcilgciilcwltkkryssvhdngzey 180  
QY 181 MEMRAVNTAKKSRLLDVTL 199  
Db 181 mfmravnltakksrlltdvcl 199  
RESULT 4  
ID AAB08731  
AAB08731 standard; Protein: 199 AA.  
X AAB08731:  
XX 02-JAN-2001 (first entry)  
XX  
DE Amino acid sequence of a human CRP1 polypeptide.  
XX  
KW CRP1; CD28 related protein-1; B7RP1; B7 related protein-1;  
KW T-lymphocyte activation; type I transmembrane protein; T cell activation;  
KW T cell proliferation; T-cell mediated disorder.  
XX  
OS Homo sapiens.  
XX  
FH Key  
FH Peptide 1..20  
FT /note= "signal peptide"  
FT 21..199  
FT Protein /note= "mature protein"  
FT 21..140  
FT Domain /note= "extracellular domain"  
FT 141..161  
FT /note= "predicted transmembrane domain"  
FT 162..199  
FT Domain /note= "intracellular domain"  
XX

PN W0200046240-A2.  
XX  
PD 10-AUG-2000.  
XX  
XX 27-JAN-2000; 2000WO-US01871.  
XX  
PR 03-FEB-1999; 99US-0244448.  
PR 08-MAR-1999; 99US-0264527.  
XX  
PA (AMGE-) AMGEN INC.  
XX  
PI Yoshinaga SK:  
XX WPI: 2000-543476/49.  
DR N-PSDB; AAA64558.  
XX  
PT Novel nucleic acids encoding the proteins CRP-1 and B7RP1 are useful  
PT in the treatment, prevention and diagnosis of T cell mediated disorders  
XX  
XX Disclosure; Fig 13A; 174pp; English.  
XX  
XX The present sequence represents a CRP1 (CD28 related protein-1)  
CC polypeptide. The specification also describes a B7RP1 (B7 related  
CC protein-1) polypeptide. The polypeptides are involved in T-lymphocyte  
CC activation, and represent a receptor-ligand pair. CRP1 and B7RP1 are  
CC predicted to be a type I transmembrane protein. The nucleic acids are  
CC useful for regulating T cell activation or proliferation in an animal.  
CC The polypeptides are useful for treating, preventing ameliorating or  
CC diagnosing a T-cell mediated disorder in an animal. They can also be  
CC used to identify test molecules that bind to the polypeptides.  
Sequence 199 AA:  
Query Match 100.0%; Score 1082; DB 21; Length 199;  
Best Local Similarity 100.0%; Pred. No. 6.6e-116;  
Matches 199; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
QY 1 MKSGLMWYFELCLRIKVTGTGELNSANEMEFHNGVQIICKYDPDIYOQRMOLKGGQ 60  
Db 1 mksq1wylfclrlkvtgtelngsanemeflhnvgvqilckypdlyqkfmqllkxgq 60  
QY 61 ILCDLTKTKGSGNTVSIKSLKFCCHSOLSNNSVSEFLYMLDHSNANYFCNLSTDPDPFK 120  
Db 61 ilcdltkktkgsntvskslkfcchsqslsnsvsfllyldhshanyfcnlstfdppfk 120  
QY 121 VTLGGYIHYESQLCOLKFWLPYGCAFYVVCILGCIILCWLTKKRYSSVHPDNGEY 180  
Db 121 vtlggylhyesqlcqlkfwlpigcaafvvcilgciilcwltkkryssvhdngzey 180  
QY 181 MEMRAVNTAKKSRLLDVTL 199  
Db 181 mfmravnltakksrlltdvcl 199  
RESULT 5  
ID AAE03428  
AAE03428 standard; Protein: 199 AA.  
XX  
XX AAE03428:  
XX  
DT 10-AUG-2001 (first entry)  
XX  
DE Human gene 2 encoded secreted protein HT2SG64, SEQ ID NO: 111.  
XX  
KW Human; secreted protein; proliferative disorder; cancer; tumour; asthma;  
KW foetal abnormality; developmental abnormality; hematopoietic disorder;  
KW immune system disorder; AIDS; autoimmune disease; rheumatoid arthritis;  
KW Parkinson's disease; cognitive disorder; schizophrenia; skin disorder;  
KW psoriasis; sepsis; diabetes; atherosclerosis; cardiovascular disorder;  
KW inflammation; neurological disorder; Alzheimer's disease; food additive;  
KW angiogenic disorder; kidney disorder; gastrointestinal disorder; allergy;  
KW

KW pregnancy-related disorder; endocrine disorder; infection; wound healing;  
KM cell culture; chemotaxis; vunerary; binding partner identification;  
XX gene therapy.  
OS Homo sapiens.  
XX  
FH Key Location/Qualifiers  
FT Peptide 1..19  
FT /label= Signal\_peptide  
FT Protein 20..111  
FT /note= "Mature human secreted protein"  
XX  
PN WO200132675-A1.  
XX  
PD 10-MAY-2001.  
XX  
PE 25-OCT-2000; 2000WO-US29363.  
XX  
PF 29-OCT-1999; 99US-0162239.  
XX  
PR 30-JUN-2000; 2000US-0215139.  
XX  
PI (HUMA-) HUMAN GENOME SCI INC.  
XX  
PI Ruben SM, Komatsoulis GA, Wei P, Baker KP, Young PE;  
XX  
DR WPI; 2001-328772/34.  
XX  
DR N-PSDB; AAD07810.  
XX  
PT Thiry two human secreted proteins, useful for treating cancers,  
PT hyperproliferative disorders, inflammatory disorders, neurological  
PT disorders, autoimmune diseases and cardiovascular disorders -  
XX  
XX  
PS Claim 11; Page 471; 576pp; English.  
XX  
CC AAD07809-AAD07907 represent cDNAs corresponding to 32 human secreted  
CC protein genes, and AAE03427-AAE03523 represent the proteins they encode.  
CC AAE03524-AAE03537 represent human secreted protein fragments or variants.  
CC The secreted proteins and their genes are useful for preventing, treating  
CC or ameliorating medical conditions, e.g., by protein or gene therapy.  
CC Pathological conditions can be diagnosed by determining the amount of the  
CC new protein in a sample or by determining the presence of mutations in  
CC the new genes. Specific uses are described for each of the 32 genes,  
CC based on the tissues in which they are most highly expressed, and include  
CC developing products for the diagnosis or treatment of proliferative  
CC disorders, cancer, tumours, foetal and developmental abnormalities,  
CC haematopoietic disorders, diseases of the immune system, AIDS, autoimmune  
CC diseases (e.g., rheumatoid arthritis), inflammation, allergies,  
CC neurological disorders (e.g., Alzheimer's disease, Parkinson's disease),  
CC cognitive disorders, schizophrenia, asthma, skin disorders (e.g.,  
CC psoriasis), sepsis, diabetes, atherosclerosis, cardiovascular disorders,  
CC angiogenic disorders, kidney disorders, gastrointestinal disorders,  
CC pregnancy-related disorders, endocrine disorders, and infections. The  
CC proteins can also be used to aid wound healing and epithelial cell  
CC proliferation, to prevent skin aging due to sunburn, to maintain organs  
CC before transplantation, for supporting cell culture of primary tissues,  
CC to regenerate tissues, to identify their cognate ligands or binding  
CC partners, and in chemotaxis, and can be used as a food additive or  
CC preservative to modify storage properties. Antibodies specific for a  
CC protein of the invention can be used in alleviating symptoms associated  
CC with the disorders mentioned above, and in diagnostic immunoassays e.g.,  
CC radioimmunoassay or enzyme linked immunosorbent assay (ELISA).  
CC The present sequence represents a human secreted protein of  
CC the invention.  
XX  
XX  
SQ Sequence 199 AA;  
XX  
Query Match 100.0%; Score 1082; DB 22; Length 199;  
Best Local Similarity 100.0%; Pred. No. 6,6e-116;  
Matches, 199; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
OY 1 MKSLWFFELCLRIKVLTEGINSANWEMIFHNGGVLICKPDIYQGRKMLKGSG 60  
|||||

Db 1 mksglwyfficllrlkyltelnginsanyemiflmngvgvllckypdlvqgfkmgllkgyg 60  
OY ILCDLTKSGSGNTVSTKSLKFCBSOLSNNNSVPEFLXNLDSHANYFCNLSIFDPPFK 120  
|||||  
Db 61 ILCDLTKSGSGNTVSTKSLKFCBSQSLNNSVSFFLYNLDSHANYFCNLSIFDPPFK 120  
|||||  
OY 121 VTLTGXYLHLYESQLCCQLKFWLPDGCAGFYVVCILCCLICLWLTCKKSSVHDNGEY 180  
Db 121 vtlcgyylhlyesqlccqlkfwlpdgcagfvyvvcilcclwltckkssvhdngey 180  
OY 181 MFMRVNTAKSRCLDVTL 199  
Db 181 mfmrvnltaksrcltdvltl 199  
|||||  
RESULT 6  
AAE03460  
ID AAE03460 standard; Protein: 199 AA.  
XX  
AC AAE03460;  
XX  
DT 10-AUG-2001 (first entry)  
XX  
DE Human gene 2 encoded secreted protein HT2SG64, SRQ ID NO: 143.  
XX  
KW Human; secreted protein; proliferative disorder; cancer; tumour; asthma;  
KW foetal abnormality; developmental abnormality; haematopoietic disorder;  
KW immune system disorder; AIDS; autoimmune disease; rheumatoid arthritis;  
KW Parkinson's disease; cognitive disorder; schizophrenia; skin disorder;  
KW psoriasis; sepsis; diabetes; atherosclerosis; cardiovascular disorder;  
KW inflammation; neurological disorder; Alzheimer's disease; food additive;  
KW angiogenic disorder; kidney disorder; gastrointestinal disorder; allergy;  
KW pregnancy-related disorder; endocrine disorder; infection; wound healing;  
KW cell culture; chemotaxis; vunerary; binding partner identification;  
KW gene therapy.  
XX  
XX  
OS Homo sapiens.  
XX  
FH Key Location/Qualifiers  
FT Peptide 1..19  
FT /label= Signal\_peptide  
FT Protein 20..199  
FT /note= "Mature human secreted protein"  
XX  
XX  
PS WO200132675-A1.  
XX  
PN 10-MAY-2001.  
XX  
PE 25-OCT-2000; 2000WO-US29363.  
XX  
PF 29-OCT-1999; 99US-0162239.  
XX  
PR 30-JUN-2000; 2000US-0215139.  
XX  
PI (HUMA-) HUMAN GENOME SCI INC.  
XX  
PI Ruben SM, Komatsoulis GA, Wei P, Baker KP, Young PE;  
XX  
DR WPI; 2001-328772/34.  
XX  
DR N-PSDB; AAD07842.  
XX  
PT Thiry two human secreted proteins, useful for treating cancers,  
PT hyperproliferative disorders, inflammatory disorders, neurological  
PT disorders, autoimmune diseases and cardiovascular disorders -  
XX  
XX  
PS Claim 11; Page 489-490; 576pp; English.  
XX  
CC AAD07809-AAD07907 represent cDNAs corresponding to 32 human secreted  
CC protein genes, and AAE03427-AAE03523 represent the proteins they encode.  
CC AAE03524-AAE03537 represent human secreted protein fragments or variants.  
CC The secreted proteins and their genes are useful for preventing, treating  
CC or ameliorating medical conditions, e.g., by protein or gene therapy.  
CC Pathological conditions can be diagnosed by determining the amount of the  
CC new protein in a sample or by determining the presence of mutations in

CC the new ones. Specific uses are described for each of the 32 genes,  
CC based on the tissues in which they are most highly expressed, and include  
CC developing products for the diagnosis or treatment of proliferative  
CC disorders, cancer, tumours, focal and developmental abnormalities,  
CC haemolipietic disorders, diseases of the immune system, AIDS, autoimmune  
CC diseases (e.g., rheumatoid arthritis), inflammation, allergies, autoimmue  
CC neurological disorders (e.g., Alzheimer's disease, Parkinson's disease),  
CC cognitive disorders, schizophrenia, asthma, skin disorders (e.g.,  
CC psoriasis), sepsis, diabetes, atherosclerosis, cardiovascular disorders,  
CC angiogetic disorders, kidney disorders, gastrointestinal disorders,  
CC pregnancy-related disorders, endocrine disorders, and infections. The  
CC proteins can also be used to aid wound healing and epithelial cell  
CC proliferation, to prevent skin aging due to sunburn, to maintain organs  
CC before transplantation, for supporting cell culture of primary tissues,  
CC to regenerate tissues, to identify their cognate ligands or binding  
CC partners, and in chemotaxis, and can be used as a food additive or  
CC preservative to modify storage properties. Antibodies specific for a  
CC protein of the invention can be used in alleviating symptoms associated  
CC with the disorders mentioned above, and in diagnostic immunoassays e.g.,  
CC radioimmunoassay or enzyme linked immunosorbent assay (ELISA).  
CC The present sequence represents a human secreted protein of  
CC the invention.

**SQ**      **Sequence**      **199 AA;**

Query Match	100.0%;	Score 1082;	DB 22;	Length 199;
Best Local Similarity	100.0%;	Pred. No. 6.6e-116;		
Matches 199; Conservative	0;	Mismatches	0;	Indels 0; Gaps 0;

Qy	1	MKSLIAWFEFLCEIKIVLVTGINSANAYEMKIFIPINGVOILCKYPRDVOOEKNOLLKGGQ	60
Db	1	mksliawfelflicirixlvtgeingsanyemiflmngvqlckypdvlvqfkmqllkqgq	60
Qy	61	ILCDLRTKSGSNTVSIRKSEFCHQSOLSNNSVSFFLYLNDHSHANYYFCMLSIFFDPPEK	120
Db	61	ilcdlrltksgsntvsirkselchqsolsnnsvsfflylnhshanyyfcmlsifdpppek	120
Qy	121	VTLTGVLHIIYESQLCCQLKFWLPIGCAAAVVCILACILICMLTKRKRTSSVHPDNGEY	180
Db	121	vltlgvlylhiesqlccqklfwlpiigcaafvvcilgcllclwlltkkkyssvhdngzey	180
Qy	181	MEMRAVNTAKKSRLEDTYL	199
Db	181	mfmravntakksriledtvcl	199

RESULT 7  
AAE03525 standard; Protein; 199 AA

AC	AAE03525;	.
XX		
DT	10-AUG-2001	(first entry)

Human secreted protein variant, SEQ ID NO: 211.

KW Human; secreted protein; proliferative disorder; cancer; tumour; asthma;  
KW foetal abnormality; developmental abnormality; haematoproliferic disorder;  
KW immune system disorder; AIDS; autoimmune disease; rheumatoid arthritis;  
KW Parkinson's disease; cognitive disorder; schizophrenia; skin disorder;  
KW postprandial; sepsis; diabetes; atherosclerosis; cardiovascular disorder;  
KW inflammation; neurological disorder; Alzheimer's disease; food additive;  
KW angiogenic disorder; kidney disorder; gastrointestinal disorder; allergy;  
KW pregnancy-related disorder; endocrine disorder; infection; wound healing;  
KW cell culture; chemotaxis; vulnerable; binding partner identification;  
KW gene therapy.

AA Homo sapiens.  
OS  
XX  
PN - WO200132675-A1.  
XX  
PD 10-MAY-2001.

XX 25-OCT-2000; 2000MO-US29363.  
PE  
XX 29-OCT-1999; 99US-0162239.  
PR  
PR 30-JUN-2000; 2000US-0215139.  
XX  
PA (HUMA-) HUMAN GENOME SCI INC.  
XX  
XX  
PI Ruben SM, Komatsoulis GA, Wei P, Baker KP, Young PE;  
XX WPI; 2001-328772/34.  
DR

PT Thirty-two human secreted proteins, useful for treating cancers,  
PT hyperproliferative disorders, inflammatory disorders, neurological  
PT disorders, autoimmune diseases and cardiovascular disorders -  
XX  
XX  
PS Disclosure: Page 524; 576pp; English.

PS Disclosure; Page 524; 576pp; English

[illegible]

50 Sequence 199 AA;

Query Match	100.0%	Score 1082;	DB 22;	Length 199;
Best Local Similarity	100.0%;	Pred. No. 6.6e-116;		
Matches 199; Conservative	0;	Mismatches	0;	Gaps 0;

QY	1	MKSLSMFEFLFCLIKIVLTGINSANVEMFIPNGSVOLICKPPDVOOQKMLLKGQ	60
	1		
Db	1	mkslslwfflfclicrlkvlgtginsanvemfifmgsvqlckypdlvqgfmglkqgq	60
QY	61	ILCDLRTKSGSGNTVSIKSLKFCCHSOLSNNSVSFFLYNLDSHANYFYCNLSITFDPPEK	120
Db	61	ilcdlctkktsgsgntvslkslklfchsgsolnsnsvsfflynldshanyfcmnlstfdppfk	120
QY	121	VTLTGVLHIIYESOLCQKFLWLPICGAAYVVCITLCILCWLTKKKYSSVHDPNGEY	180
	1		
Db	121	vltlgtgyllhyesqllcqgkflwlpigcaafvvcilgcilicwlctkkkyssvhdnpgey	180
QY	181	MEMRAVNTAKKSRITDYL 199	
Db	181	mfmraavnltakksriltldyl 199	

## RESULT 8

ID	AAV92213
AC	AAV92213 standard; Protein; 198 AA.
XX	
XX	AAV92213;
DT	10-AUG-2000 (first entry)
XX	
DE	Human Th2-specific polypeptide, h1228.
XX	
KW	h1228; Th2-specific; T helper cell; anti-inflammatory; antiarthritic; CD28; antidiabetic; immunosuppressive; neuroprotective; dermatological; antipsoriatic; antiallergic; antitumor; antiviral; ophthalmological. CMTA4; nephrotoxic; anti-HIV; antibacterial.
OS	Homo sapiens.
FT	
FT	Key Location/Qualifiers
FT	Peptide 113..118
FT	/label= conserved_PPP_motif /note= "common in CD28 and CTLA-4"
FT	178..181
FT	/label= YXMK_motif /note= "common in CD28 and CTLA-4; necessary for CD28-mediated phosphatidylinositol 3-kinase activity"
PN	WO200019988-A1.
XX	
PD	13-APR-2000.
XX	
PF	06-OCT-1999; 99WO-US23156.
PR	07-OCT-1998; 98US-0168229.
PR	26-FEB-1999; 99US-0258670.
PR	06-OCT-1999; 99US-0413136.
PA	(MILL-) MILLENNIUM PHARM INC.
PI	Léhar S, Manning S, Coyle AJ, Gutierrez-Ramos J;
DR	WPI: 2000-303619/26.
N-PSTDB:	AAA09056.
PT	T helper (Th) 2 nucleic acids and encoded proteins, useful for the diagnosis and treatment of immune and respiratory disorders such as Crohn's diseases, arthritis, insulin dependent diabetes and autoimmunity
Claim 16;	Page 138-139; 159pp; English.
This Th2-specific polypeptide,	which has similarity to human CD28 and human CTLA-4 is encoded by human orthologue h1228.
A novel method for modulating a Th2 response,	an immune response, or suppressing airway inflammation or hyperresponsiveness in a mammal comprises administering a Th2-specific polypeptide of the invention, an antibody to such a polypeptide or allelic variants of the genes. The novel DNA and polypeptide sequences are useful for treatment and diagnosis of Th cell and Th cell-like disorders such as Crohn's diseases, arthritis, insulin dependent diabetes, autoimmunity, multiple sclerosis, dermatitis, psoriasis, graft rejection, graft versus host diseases, sarcoidosis, asthma, allergies, conjunctivitis, glomerular nephritis, viral infections (including human immunodeficiency virus (HIV)), bacterial infections, bronchitis, cystic fibrosis, diphtheria, emphysema, pneumonia, and legionnaires disease.
Sequence	198 AA;
Query Match	98.6%; Score 1066.5; DB 21; Length 198;
Best Local Similarity	99.5%; Pred No. 3.9e-114;
Matches 198;	Conservative 0; Mismatches 0; Indels 1; Gaps 1
1 MKSGLMYFELCLRILKVLGTGEINGSANYEMTFPHNGVGQIIICKYPDIVOQFKMLLKGGQ 60	

Db	1	mksqglwyfifclrltkvltgelngsanymemifhnggyvqlckypdlvqgflmqqllkqgq	60
Qy	61	ILCDLTGKTRGSGNNTVYSIKSLKFCCHSOLSNNSVSFFLYNLDHSHANYFCNLISFPDPPPK	120
Db	61	ILCDLTGKTRGSGNNTVYSIKSLKFCCHSOLSNNSVSFFLYNLDHSHANYFCNLISFPDPPPK	120
Qy	121	VHLTGGLHYIESQLCCQLKFWLPTGCAAFVYVVCILGCTLLICWLRKKYSSVHDPNCEY	180
Db	121	VHLTGGLHYIESQLCCQLKFWLPTGCAAFVYVVCILGCTLLICWLRKKYSSVHDPNCEY	180
Qy	181	MEMRAVNTAKKSRLLDYTL 199	179
Db	180	MEMRAVNTAKKSRLLDYTL 198	179
RESULT 9			
ID	AAy92212	standard; Protein; 200 AA.	
XX	AAy92212;		
XX	10-AUG-2000	(first entry)	
XX			
DE	Murine Th2-specific polypeptide, m128.		
XX			
XX	m128;	Th2-specific; T helper cell; anti-inflammatory; antiarthritic;	
KW	CD28;	antidiabetic; immunosuppressive; neuroprotective; dermatological;	
KW	antiapoptotic; antisthmatic; antiallergic; anti-viral; optalmalogical		
KM	CTLA-4;	nephrotoxic; anti-HIV; antibacterial.	
XX			
OS	Mus musculus.		
XX			
FH	Key	Location/Qualifiers	
FT	Peptide	114..119	
FT		/label= conserved_ppp_motif	
FT		/note= "common in CD28 and CTLA-4"	
FT	Peptide	181..184	
FT		/label= YXXM_motif	
FT		/note= "common in CD28 and CTLA-4; necessary for CD28-mediated phosphatidylinositol 3-kinase activity"	
XX			
XX	WO200019988-A1.		
XX			
PD	13-APR-2000.		
XX			
PF	06-OCT-1999;	99WO-US23156.	
XX			
PR	07-OCT-1998;	98US-0168229.	
PR	26-FEB-1999;	99US-0258670.	
PR	06-OCT-1999;	99US-0413136.	
XX			
PA	(MILL-) MILLENNIUM PHARM INC.		
XX			
PI	Lehar S, Manning S, Coyle AJ, Gutierrez-ramos J;		
XX			
DR	WPI: 2000-303619/26.		
XX	N-PSDB; AAA09054.		
XX			
PT	T helper (Th) 2 nucleic acids and encoded proteins, useful for the diagnosis and treatment of immune and respiratory disorders such as Crohn's diseases, arthritis, insulin dependent diabetes and autoimmunity		
XX			
XX	Claim 16; Page 130-131; 159pp; English.		
XX			
CC	This Th2-specific polypeptide is encoded by a murine orthologue m128.		
CC	The protein shares homology with both human and murine CD28 and CTLA-4.		
CC	A novel method for modulating a Th2 response, an immune response, or suppressing airway inflammation or hyperresponsiveness in a mammal		
CC	comprises administering a Th2-specific polypeptide of the invention, an antibody to such a polypeptide or allelic variants of the genes. The		
CC			



CC novel DNA and polypeptide sequences are useful for treatment and  
CC diagnosis of Th cell and Th cell-like disorders such as Crohn's diseases,  
CC arthritis, insulin dependent diabetes, autoimmunity, multiple sclerosis,  
CC dermatitis, psoriasis, graft rejection, graft versus host diseases,  
CC sarcoidosis, asthma, allergies, conjunctivitis, glomerular nephritis,  
CC viral infections (including human immunodeficiency virus (HIV)),  
CC bacterial infections, bronchitis, cystic fibrosis, diphtheria,  
CC emphysema, pneumonia, and legionnaires disease.

CC  
XX  
SQ Sequence 200 AA;

Query Match 68.2%; Score 737.5; DB 21; Length 200;  
Best Local Similarity 69.3%; Pred. No. 2.4e-76;  
Matches 138; Conservative 20; Mismatches 40; Indels 1; Gaps 1;

QY 1 MRSGLWFFELFLRIKVLTEINGSANYEMFIFHNGVQIILCKYPDIYOQFMQLKGGQ 60  
DB 1 mkpfcvfvfvcflrlitlgeinsadhmfmfngvqiskypcvqqlkmrlfrere 60  
61 IICDLTKTKSGNTVSIKSLKFCHSQLSNNSVSFFLYNLDSHANYFCNLISFDPPEPK 120  
DB 61 vlceltktksgnavaiknmpmclphlsnsvsfflmpdsqgsyfcslsfddpftq 120  
QY 121 V-TLGGVLIHYESQLCCOLKFMPLPGCAAFYVVCILGCIILCWLTKKKSSVHDPNCE 179  
DB 121 ernlsqgytlhyesqlccqlkwlpygcaatfvallfgcillilwfskkkysvndpnse 180  
QY 180 YMFMRVMTAKKSRLTDVT 198  
DB 181 ymfmaavntnkksrlagvt 199

RESULT 10  
AAB08723  
ID AAB08723 standard; Protein: 200 AA.

XX  
AC AAB08723;

DT 02-JAN-2001 (first entry)

DE Amino acid sequence of a murine CRP1 polypeptide.

KM CRP1; CD28 related protein-1; B7RP1; B7 related protein-1;

KW T-lymphocyte activation; type I transmembrane protein; T cell activation;

KM T cell proliferation; T-cell mediated disorder.

OS Mus sp.

Y Key Location/Qualifiers

FT Peptide

FT Protein

FT Domain

FT Domain

FT Domain

FT Domain

PN WO200046240-A2.

PD 10-AUG-2000.

PF 27-JAN-2000; 2000WO-US01871.

PR 03-FEB-1999; 99US-0244448.

PR 08-MAR-1999; 99US-0264527.

PA (AMGE-) AMGEN INC.

XX Yoshinaga SK;

XX WPI; 2000-543476/49.  
DR N-PSDB; AAA64554.

PT Novel nucleic acids encoding the proteins CRP-1 and B7RP1 are useful

PT in the treatment, prevention and diagnosis of T cell mediated disorders

PS Claim 11; Fig 1A; 174pp; English.

CC The present sequence represents a CRP1 (CD28 related protein-1)  
CC polypeptide. The specification also describes a B7RP1 (B7 related  
CC protein-1) polypeptide. The polypeptides are involved in T-lymphocyte  
CC activation, and represent a receptor-ligand pair. CRP1 and B7RP1 are  
CC predicted to be a type I transmembrane protein. The nucleic acids are  
CC useful for regulating T cell activation or proliferation in an animal.  
CC The polypeptides are useful for treating, preventing ameliorating or  
CC diagnosing a T-cell mediated disorder in an animal. They can also be  
CC used to identify test molecules that bind to the polypeptides.

XX  
SQ Sequence 200 AA;

Query Match 67.8%; Score 734; DB 21; Length 200;  
Best Local Similarity 70.4%; Pred. No. 5.9e-76;  
Matches 138; Conservative 19; Mismatches 35; Indels 4; Gaps 2;

QY 7 YF---FLFCLRIKVLTEINGSANYEMFIFHNGVQIILCKYPDIYOQFMQLKGGQILC 63  
DB 4 yfcvfvfvcflrlitlgeinsadhmfmfngvqiskypcvqqlkmrlfrereylc 63

QY 64 DLTKTKSGNTVSIKSLKFCHSQLSNNSVSFFLYNLDSHANYFCNLISFDPPEPKV-T 122  
DB 64 eltktksgnavaiknmpmclphlsnsvsfflmpdsqgsyfcslsfddpftqern 123

QY 123 LFGVLIHYESQLCCOLKFMPLPGCAAFYVVCILGCIILCWLTKKKSSVHDPNCEYMF 182  
DB 124 lsggytlhyesqlccqlkwlpygcaatfvallfgcillilwfskkkysvndpnseymf 183

QY 183 MRAVMTAKKSRLTDVT 198  
DB 184 maavntnkksrlagvt 199

RESULT 11  
AAW75958

ID AAW75958 standard; Protein: 200 AA.

XX  
AC AAW75958;

DT 11-DEC-1998 (first entry)

DE Mouse cell surface protein.

KM Mouse; cell surface protein; thymocyte; lymphocyte; cell adhesion;

KW signal transmission; autoimmune disorder; allergy; diagnosis;

KM mitogen-stimulated.

OS Mus sp.

PN WO9838216-A1.

PD 03-SEP-1998.

PF 27-FEB-1998; 98WO-JP00837.

PR 26-FEB-1998; 98JP-0062217.

PR 27-FEB-1997; 97JP-0062290.

PA (NISH) JAPAN TOBACCO INC.

XX Tamatani T, Tezuka K;

XX

XX

XX

XX

DR WP1; 1998-481144/41.  
DR N-PSDB; AAV53200.  
XX  
XX  
PT Cell surface molecule expressed in thymocytes and lymphocytes and -  
PT mediating signal transmission and cell adhesion, and antibodies to  
PT it useful in treatment of auto-immune and allergic disorders.  
XX  
XX  
PS Claim 9; Page 110-112; 149pp; Japanese.  
XX  
XX The present sequence represents a mouse cell surface protein which is  
CC expressed by thymocytes and by mitogen-stimulated lymphocytes. The cell  
CC surface protein induces adhesion of mitogen-stimulated lymphocytes to  
CC antibodies recognising the cell surface protein. These antibodies also  
CC produce an increase in peripheral blood lymphocytes in the presence of  
CC an antibody recognising CD3 antigen. The cell surface protein contains  
CC the amino acid sequence FDPPE in its extracellular region and the  
CC sequence YMFEM in its intracellular region. The cell surface protein can  
CC be used in the prevention and treatment of autoimmune and allergic  
CC diseases, and in the diagnosis and investigation of such disorders.  
Sequence 200 AA;  
Query Match 66.8%; Score 722.5; DB 19; Length 200;  
Best Local Similarity 68.3%; Pred. No. 1.2e-74;  
Matches 136; Conservative 20; Mismatches 42; Indels 1; Gaps 1;  
YY 1 MKSLMWFLEFLRIKVLTEINGSNANEMFIFHNGGVQILCKYDPIVOQFKMQLKGQ 60  
DB 1 mkpfcfhvfrcflirlltgeinsadhrmfngvqskypetvqdkmrlfdrere 60  
YY 61 ILCDLITKSGNTVSIRKSLKFSQSLSNNSVSFFLYNLDSHANYFCNLSIFDPPPF 120  
DB 61 vlcelctksgnnavsilkpmlclhlsmnsvsfflmpdsqsgyyslfdpppfq 120  
YY 121 V-TTGGVLIHYESQLCCQKLFMLPGICAFVYVCIIGCLICWLTTRKKS SVHPDNGE 179  
DB 121 ernlsgyylhyesqlccqlklwlpvqilpatrvvlltgcillwfskkyssvhdnpse 180  
YY 180 YMFEMAVNTAKKSRRLDVT 198  
DB 181 ymfmaavntkksrslagvt 199  
RESULT 12  
AAW71874  
ID AAW71874 standard; Protein; 200 AA.  
XX  
XX AAW71874;  
DT 11-DEC-1998 (first entry)  
DE Rat cell surface protein #1.  
XX  
XX Rat; cell surface protein; thymocyte; lymphocyte; cell adhesion;  
KM signal transmission; autoimmune disorder; allergy; diagnosis;  
KW mitogen-stimulated.  
XX  
XX Rattus sp.  
OS  
XX  
XX WO9838216-A1.  
PN  
XX  
PD 03-SEP-1998.  
XX  
XX 27-FEB-1998; 98WO-JP00837.  
XX  
XX 26-FEB-1998; 98JP-0062217.  
PR 27-FEB-1997; 97JP-0062290.  
XX  
XX (NISR ) JAPAN TOBACCO INC.  
PA  
XX  
XX Tamacani T, Tezuka K;  
PI  
XX

DR WP1; 1998-481144/41.  
DR N-PSDB; AAV61357.  
XX  
XX  
PT Cell surface molecule expressed in thymocytes and lymphocytes and -  
PT mediating signal transmission and cell adhesion, and antibodies to  
PT it useful in treatment of auto-immune and allergic disorders.  
XX  
XX  
PS Claim 9; Page 106-109; 149pp; Japanese.  
XX  
XX The present sequence represents a rat cell surface protein which is  
CC expressed by thymocytes and by mitogen-stimulated lymphocytes. The cell  
CC surface protein induces adhesion of mitogen-stimulated lymphocytes to  
CC antibodies recognising the cell surface protein. These antibodies also  
CC produce an increase in peripheral blood lymphocytes in the presence of  
CC an antibody recognising CD3 antigen. The cell surface protein contains  
CC the amino acid sequence FDPPE in its extracellular region and the  
CC sequence YMFEM in its intracellular region. The cell surface protein can  
CC be used in the prevention and treatment of autoimmune and allergic  
CC diseases, and in the diagnosis and investigation of such disorders.  
Sequence 200 AA;  
Query Match 64.8%; Score 701; DB 19; Length 200;  
Best Local Similarity 67.9%; Pred. No. 3.7e-72;  
Matches 133; Conservative 17; Mismatches 42; Indels 4; Gaps 2;  
YY 7 YF--FLECLRIKVLTEINGSNANEMFIFHNGGVQILCKYDPIVOQFKMQLKGQILC 63  
DB 4 yfscvfcflklillgelndlnhmfslhdgvgqscnypetvqdkmqlfdrevlc 63  
YY 64 DLTKKSGNTVSIRKSLKFSQSLSNNSVSFFLYNLDSHANYFCNLSIFDPPPF-KVT 122  
DB 64 dltkksgntvsirkpmscopyqlsmnsvsffldnadsgsyflclsislfdpppfqkn 123  
YY 123 LTGGVLIHYESQLCCQKLFMLPGICAFVYVCIIGCLICWLTTRKKS SVHPDNGEYMF 182  
DB 124 lsgyylhyesqlccqlklwlpvqaaivaalltgcillwfskkyssvhdnpseymf 183  
YY 183 MRAVNTAKKSRRLDVT 198  
DB 184 maavntkksrslagmt 199  
RESULT 13  
AAW71875  
ID AAW71875 standard; Protein; 216 AA.  
XX  
XX AAW71875;  
DT 11-DEC-1998 (first entry)  
DE Rat cell surface protein #2.  
XX  
XX Rat; cell surface protein; thymocyte; lymphocyte; cell adhesion;  
KM signal transmission; autoimmune disorder; allergy; diagnosis;  
KW mitogen-stimulated.  
XX  
XX Rattus sp.  
OS  
XX  
XX WO9838216-A1.  
PN  
XX  
PD 03-SEP-1998.  
XX  
XX 27-FEB-1998; 98WO-JP00837.  
XX  
XX 26-FEB-1998; 98JP-0062217.  
PR 27-FEB-1997; 97JP-0062290.  
XX  
XX (NISR ) JAPAN TOBACCO INC.  
PA  
XX  
XX Tamacani T, Tezuka K;  
PI  
XX





GenCore version 4.5  
Copyright (c) 1993 - 2000 Compugen Ltd.

OM protein - protein search, using sw model

Run on: July 1, 2002, 16:45:37 ; Search time 19.71 Seconds

(without alignments)  
970.156 Million cell updates/sec

Title: US-09-509-283B-2

Perfect score: 1082

Sequence: 1 MKSGMYFFFLFCLRIKIVLTC.....YMFRAVNTAKSRLLDVTLL 199

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283138 seqs, 96089334 residues

Minimum DB seq length: 0

Post-processing: Minimum Match 0%

Database: 1: p1r1:\*

2: p1r2:\*  
3: p1r3:\*  
4: p1r4:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query Match length	ID	Description
1	1082	100.0	199 2 S78540	inducible T-cell c
2	701	64.8	200 2 JC7397	activation-inducib
3	696	64.3	216 2 JC7396	activation-inducib
4	152	14.0	218 2 S24413	T-cell surface gly
5	150.5	13.9	221 2 I46689	CD28 precursor - T
6	139.5	12.9	173 2 I46197	cell surface prote
7	139.5	12.9	220 1 RWHU28	T-cell surface gly
8	138	12.8	218 2 A43523	T-cell surface gly
9	103.5	9.6	218 2 T18986	hypothetical prote
10	97	9.0	221 2 S25168	CH28 protein - ch
11	91.5	8.5	383 2 T21946	hypothetical prote
12	87	8.0	330 2 A40071	Fc gamma (IgG) rec
13	87	8.0	330 2 I49660	Fc-gamma-1/gamma-2
14	87	8.0	563 2 T32479	hypothetical prote
15	86.5	8.0	223 2 A29063	cytotoxic T-lympho
16	86	7.9	223 2 T09536	cytotoxic T-lympho
17	84	7.8	283 1 FCMGSI	Fc gamma (IgG) rec
18	84	7.8	285 2 D69440	conserved hypotet
19	83.5	7.7	186 2 S08614	cytotoxic T-lympho
20	82.5	7.6	248 1 QGBE4L	probable glycoprot
21	81	7.5	276 2 S20690	31.6k hypothetical
22	81	7.5	680 2 JC5895	killer cell inhibi
23	81	7.5	1584 2 S57161	killer cell inhibi
24	80.5	7.4	247 2 D90028	hypothetical prote
25	80.5	7.4	635 2 JC5896	hypothetical prote
26	78	7.2	231 2 T23136	killer cell inhibi
27	77.5	7.2	80 2 F86027	hypothetical prote
28	77.5	7.2	220 2 A48581	37k proline-rich s
29	77.5	7.2	1070 2 JC4593	protein-tyrosine k

30	77	7.1	338 2 T34364	hypothetical prote
31	77	7.1	2104 2 D91286	hypothetical prote
32	77	7.1	2104 2 H86127	hypothetical prote
33	76.5	7.1	223 2 I46696	CTLA-4 precursor -
34	76.5	7.1	323 2 S06946	Fc gamma (IgG) rec
35	76.5	7.1	1237 2 A54080	protein-tyrosine-p
36	76	7.0	301 2 I54209	hypothetical prote
37	76	7.0	317 2 J10118	Fc gamma (IgG) rec
38	76	7.0	546 2 S52053	cytochrome-c oxida
39	75.5	7.0	261 2 S29360	Fc gamma (IgG) rec
40	75.5	7.0	277 2 T21330	hypothetical prote
41	75.5	7.0	235 2 T14602	variant-specific s
42	75	6.9	418 2 AD3417	transporter, mts s
43	75	6.9	1132 1 OSBPL	host specificity p
44	74.5	6.9	201 2 G90134	hypothetical prote
45	74.5	6.9	235 2 I50610	T-cell surface gly

## ALIGNMENTS

## RESULT 1

Inducible T-cell co-stimulator ICOS precursor - human

C:Species: Homo sapiens (man)

C>Date: 05-Mar-1999 #sequence\_revision 05-Mar-1999 #text\_change 07-May-1999

C:Accession: S78540; S78748; S78749

R:Kroczeck, R.

submitted to the Protein Sequence Database, June 1998

A:Reference number: S78540

A:Accession: S78540

A:Molecule type: mRNA

A:Residues: 1-199 <KRO>

A:Experimental source: cell line MOLT-4V

R:Hutloff, A.; Dittlich, A.M.; Beier, K.C.; Eljaschewitsch, B.; Kraft, R.; Anagnostop

Nature 397, 263-266, 1999

A:Title: ICOS is an inducible T-cell co-stimulator structurally and functionally rela

A:Reference number: S78748; M01D:99127892

A:Accession: S78748

A:Molecule type: mRNA

A:Residues: 1-199 <HUT1>

A:Experimental source: cell line MOLT-4V

A:Accession: S78749

A:Molecule type: protein

A:Residues: 'X', 193-198 <HUT2>

A:Experimental source: cell line MOLT-4V

C:Complex: homodimer

C:Keywords: dimer; glycoprotein; T-cell; transmembrane protein

F:1-19/Domain: (or 1-20) signal sequence #status predicted <Sig>

F:20-199/Product: (or 21-199) Inducible costimulator ICOS #status predicted <MNT>

F:21-138/Domain: extracellular #status predicted <EXT>

F:26-132/Domain: immunoglobulin homology <IMM>

F:139-164/Domain: transmembrane #status predicted <TM>

F:165-199/Domain: intracellular #status predicted <INT>

F:23,89,110/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match

Best Local Similarity 100.0%; Score 1082; DB 2; Length 199;

Matches 199; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY	1	MKSGMYFFFLFCLRIKIVLTC.....YMFRAVNTAKSRLLDVTLL	QY	60	.....
DB	1	MKSGMYFFFLFCLRIKIVLTC.....YMFRAVNTAKSRLLDVTLL	DB	60	.....
QY	61	ILCDLTKTKGSGNTVSISKLKCHSOLSNNSVSFFLYINDHSHANYFCNLSTFPDPPPK	QY	120	.....
DB	61	ILCDLTKTKGSGNTVSISKLKCHSOLSNNSVSFFLYINDHSHANYFCNLSTFPDPPPK	DB	120	.....
QY	121	VTLTGGLHYTESOLCCOLKFWLPICGAFVYVCTILGCLICMLKRRKSSVHPDNGEX	QY	180	.....
DB	121	VTLTGGLHYTESOLCCOLKFWLPICGAFVYVCTILGCLICMLKRRKSSVHPDNGEX	DB	180	.....

Qy	181	MEMRAVNTAKKSRLTDVTL	1999
Db	181	MEMRAVNTAKKSRLTDVTL	1999

2	Matches	132;	Mismatches	40;	Indels	4;	Gaps	2.
RESULT IC7397	Conservative	16;						

Query Match	64.8%	Score 701	DB 2	Length 200
Best Local Similarity	67.9%	Pred. No. 2.2e-60		
Matches 133	Conservative 17	Mismatches 42	Indels 4	Gaps 2

183 MRAVNTAKKSRLT DVT 198  
| | | | | : |  
184 MAAVNTNKKSLAGMT 199

RESULT 3  
JC7396  
activation-inducible lymphocyte immuno-mediatory molecule-1 - rat  
C:Species: Rattus norvegicus (Norway rat)  
C:Date: 17-Nov-2000 #sequence,revision 17-Nov-2000 #text\_change 17-Nov-2000  
C:Accession: JC7396; PC7099  
R:Tezuka, K.; Tsuji, T.; Hirano, D.; Tamatani, T.; Sakamaki, K.; Kobayashi, Y.; Kamada, Biochem. Biophys. Res. Commun. 276, 335-345, 2000  
A:Title: Identification and characterization of rat ALIM/ICOS, a novel T-cell costimulatory  
A:Reference number: JC7396  
A:Contents: Spleen  
A:Accession: JC7396  
A:Molecule type: mRNA  
A:Residues: 1-216 <TE2>  
A:Cross-references: DDBJ:AB023133  
A:Accession: PC7099  
A:Molecule type: protein  
A:Residues: 21-40 <TE2>  
C:Comment: This protein is an inducible cell surface glycoprotein, and a type I transmembrane protein, and plays an important role for the maturation or selection of T cells in thymus.  
A:Genetics:

A:Gene: allim-1  
C:Keywords: glycoprotein; T-cell; transmembrane protein

Query Match	64.3%	Score 696;	DB 2;	Length 216;
Best Local Similarity	68.8%	Pred. No. 7.3e-60;		
Matches 132; Conservative	16;	Mismatches 40;	Indels 4;	Gaps 2

Oy	64	D L T K R G S G N Y I S I S L F C H S O L S N N S V P E L N D L H S A N Y F C N I S T E D P P F - k v t	122
		I :                     : : :	
Db	64	D L T K R G S G N Y I S I N P M S C P Y Q L S N N S V S P F L N D A D S S G S Y F L C S I S T F D P P P F Q E K N	123
Oy	123	L T G C L T L Y E S O L C O Q L F W P I P I C A A P V Y V C I L C I L T K L T K K Y S S V H D N G E Y M F	187
		:	
Db	124	L S G G I L L I Y E S O L C O Q L K M L P V G C A E V A A L L F G C I F Y W F A K K T R S S V H D N S E T M F	183
Oy	183	M R A V N T A K K S R L	194
Db	184	M A A V N T N K K S R L	195

RESULT 4  
S24413 T-cell surface glycoprotein CD28 - rat  
C:Species: Rattus norvegicus (Norway rat)  
C:Date: 13-Jan-1995 #sequence\_rev13-Jan-1995 #text\_change 21-Jan-2000  
C:Accession: S24413; S38722  
R:Clark, G.J.; Dallman, M.J.  
Immunogenetics 35, 54-57, 1992  
A>Title: Identification of a cDNA encoding the rat CD28 homologue.  
A:Reference number: S24413; M0ID:92104640  
A:Accession: S24413  
A>Status: preliminary  
A:Molecule type: mRNA  
A:Residues: 1-218 <CLA>  
A:Cross-references: EMBL:X55288  
R:Clark, G.J.; Dallman, M.J.  
submitted to the EMBL Data Library, October 1990  
A:Reference number: S38722  
A:Accession: S38722  
A>Status: preliminary  
A:Molecule type: mRNA  
A:Residues: 1-152,'P',154-218 <CL2>  
A:Cross-references: EMBL:X55288; P1DN:G55905; P1DN:CAA39003.1; P1D:G55906  
C:Superfamily: T-cell surface glycoprotein CD28; Immunoglobulin homology  
C:Keywords: glycoprotein  
F:34-115/Domain: Immunoglobulin homology <IM>

RESULT	5
I46689	
CD28 precursor - rabbit	

GenCore version 4.5  
Copyright (c) 1993 - 2000 Compugen Ltd.

OM protein - protein search, using sw model

Run on: July 1, 2002, 16:49:02 ; Search time 11.9 Seconds

(without alignments)  
647,495 Million cell updates/sec

Title: us-09-509-283b-2

Perfect score: 1082

Sequence: 1 MRSGLMYFLFLCLRIKVLTG.....YMFRAVNTAKSRITDVTLL 199

Scoring table: BLOSUM62

Searched: 105224 seqs, 38719550 residues

Number of hits satisfying chosen parameters: 105224

Maximum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Database : Swissprot\_40:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	159	14.7	218	1	CD28_RAT
2	150.5	13.9	221	1	CD28_RABIT
3	141	13.0	219	1	CD28_BOVIN
4	139.5	12.9	220	1	CD28_HUMAN
5	138	12.8	218	1	CD28_MOUSE
6	97	9.0	221	1	CD28_CHICK
7	89	8.2	321	1	OSV1_HUMAN
8	87	8.0	330	1	FCG2_MOUSE
9	86.5	8.0	223	1	CTL4_MOUSE
10	86	7.9	223	1	CTL4_MOUSE
11	82.5	7.6	248	1	CTL4_MOUSE
12	81	7.5	1382	1	CTL4_MOUSE
13	81	7.5	1584	1	CTL4_MOUSE
14	77.5	7.2	324	1	CTL4_MOUSE
15	77.5	7.2	1070	1	CTL4_MOUSE
16	76.5	7.1	223	1	CTL4_MOUSE
17	76.5	7.1	323	1	CTL4_MOUSE
18	76	7.0	317	1	CTL4_MOUSE
19	76	7.0	448	1	CTL4_MOUSE
20	76	7.0	450	1	CTL4_MOUSE
21	76	7.0	466	1	CTL4_MOUSE
22	76	7.0	562	1	CTL4_MOUSE
23	75.5	7.0	261	1	CTL4_MOUSE
24	75	6.9	462	1	CTL4_MOUSE
25	75	6.9	1132	1	CTL4_MOUSE
26	74.5	6.9	761	1	CTL4_MOUSE
27	74	6.8	344	1	CTL4_MOUSE
28	74	6.8	367	1	CTL4_MOUSE
29	73.5	6.8	285	1	CTL4_MOUSE
30	73.5	6.8	322	1	CTL4_MOUSE
31	73.5	6.8	322	1	CTL4_MOUSE
32	73.5	6.8	496	1	CTL4_MOUSE
33	73.5	6.8	496	1	CTL4_MOUSE

34	73.5	6.8	497	1	GRB_HUMAN	P48167 homo sapien
35	73.5	6.8	1162	1	BXEN_CLOBO	Q06366 clostridium
36	73	6.7	275	1	YD84_YEAST	Q12359 saccharomyc
37	73	6.7	916	1	SCRB_LIMPO	Q25386 limulus pol
38	72.5	6.7	654	1	BRR2_HUMAN	Q01742 homo sapien
39	72	6.7	561	1	ALAD_RAT	P22944 rattus norv
40	72	6.7	569	1	YLS3_YEAST	Q06567 saccharomyc
41	71.5	6.6	634	1	YCX3_EUGER	P31916 euglena gra
42	71.5	6.6	1051	1	PRK7_CHICK	Q91048 gallus gail
43	71	6.6	212	1	KITH_ENCCU	Q96720 encephalito
44	71	6.6	466	1	ALIA_BOVIN	P18130 bos taurus
45	70.5	6.5	524	1	VLL_HPV58	P25535 human papill

## ALIGNMENTS

RESULT	ID	CD28_RAT	STANDARD:	PRT:	218 AA.
AC	P31042:				
DT	01-JUL-1993 (Rel. 26, Created)				
DT	01-JUL-1993 (Rel. 26, Last sequence update)				
DT	01-MAR-2002 (Rel. 41, Last annotation update)				
DE	T-cell-specific surface glycoprotein CD28 precursor.				
GN	CD28.				
OS	Rattus norvegicus (Rat).				
OC	Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;				
OC	Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.				
OX	NCBI_TaxID=10116;				
RN	[1]				
RP	SEQUENCE FROM N.A.				
RC	STRAIN-DA; TISSUE=Lymphoid;				
RX	MEDLINE=92104640; PubMed=1309509;				
RA	Clark G.J., Dallman M.J.;				
RT	"Identification of a cDNA encoding the rat CD28 homologue";				
RL	Immunogenetics 35:34-37(1992).				
CC	-1- FUNCTION: POSSIBLY INVOLVED IN T-CELL ACTIVATION. BINDS TO B7-1				
CC	AND B7-2 (B70).				
CC	-1- SUBUNIT: HOMODIMER; DISULFIDE-LINKED.				
CC	-1- SUBCELLULAR LOCATION: Type I membrane protein.				
CC	-1- SIMILARITY: BELONGS TO THE IMMUNOGLOBULIN SUPERFAMILY.				
CC	-1- SIMILARITY: CONTAINS 1 IMMUNOGLOBULIN-LIKE V-TYPE DOMAIN.				
CC	-----				
CC	This SWISS-PROT entry is copyright. It is produced through a collaboration				
CC	between the Swiss Institute of Bioinformatics and the EMBL outstation -				
CC	the European Bioinformatics Institute. There are no restrictions on its				
CC	use by non-profit institutions as long as its content is in no way				
CC	modified and this statement is not removed. Usage by and for commercial				
CC	entities requires a license agreement (see <a href="http://www.isb-sib.ch/announce/">http://www.isb-sib.ch/announce/</a>				
CC	or send an email to <a href="mailto:license@sib-sib.ch">license@sib-sib.ch</a> ).				
CC	-----				
DR	EMBL: X55288; CNA39003.1; -.				
DR	PIR: S38722; S38722.				
DR	InterPro: IPR003600; Ig_1-like.				
DR	SMART: SM00410; Ig_Like; 1.				
KW	Immunoglobulin domain; T-cell; Glycoprotein; Signal; Transmembrane.				
FT	SIGNAL	1	19		
FT	CHAIN	20	218		
FT					
FT	DOMAIN	20	150		
FT	TRANSMM	151	177		
FT	DOMAIN	178	218		
FT	DOMAIN	29	138		
FT	CARBOHD	72	72		
FT	CARBOHD	93	93		
FT	CARBOHD	106	106		
FT	CARBOHD	130	130		
SO	SEQUENCE	218 AA;	25170 MM;		

Query Match 14.7%; Score 159; DB 1; Length 218;  
Best local Similarity 26.5%; Pred. No. 2, 1e-08;

[illegible]

Y	30	MEIFINGVOJLICKPPD--IVOQFMOLKGLQGLCDLTKTKGS-----GNVSIKSL 80
Db	29	MLVYANNNEVNLSCKTTYLNFESKEFASLTKGADSAVECYVANGNNSHPHOHSTTGFN-- 86
Oy	81	KFCHQSLSNNSVSFEFLVLDHSHANYFCNLSIEDPPPF--KVLTGGLHYIESQLC-- 136
Db	87	-----CDGKLENTVEFLKMLVYQNDIYCKLEIEMVPPPYLDNEKSNSTIHYKEQHFCPA 144
Oy	137	-----COLKFWLPI--GCAFFVVCICGLICILCMLTKK 168
Db	145	HPSEKSTLEFVLYVGVAVLAFLYSMLVYVALLFSCMKSKK 184
RESULT	3	
ID	CD28_BOVIN	STANDARD; PRT; 219 AA.
AC	028071:	
DT	01-NOV-1997	(Rel. 35, Created)
DT	01-NOV-1997	(Rel. 35, Last sequence update)
DT	01-MAR-2002	(Rel. 41, Last annotation update)
De		T-cell-specific surface glycoprotein CD28 precursor.
GN	CD28.	
OS	Bos taurus (Bovine).	
OC	Eukaryota; Metazoa; Chordata; Cranialia; Vertebrata; Euteleostomi;	
CC	Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;	
CC	Bovidae; Bovinae; Bos.	
CC	NCBI_TaxID:9913;	
RN	[1]	
RP	SEQUENCE FROM N.A.	
RA	MEDLINE:96186531; PubMed:8606060;	
RA	Parsons K.R., Young J.R., Collins R.A., Howard C.J.;	
RT	"Cattle CLA-4, CD28 and chicken CD28 bind CD86: mypppy is not	
RL	conserved in cattle CD28."	
CC	Immunogenetics 43:388-391(1996).	
CC	-1- FUNCTION: POSSIBLY INVOLVED IN T-CELL ACTIVATION. BINDS TO B7-1	
CC	AND B7-2 (B70).	
CC	-1- SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).	
CC	-1- SUBCELLULAR LOCATION: Type I membrane protein.	
CC	-1- SIMILARITY: BELONGS TO THE IMMUNOGLOBULIN SUPERFAMILY.	
CC	-1- SIMILARITY: CONTAINS 1 IMMUNOGLOBULIN-LIKE V-TYPE DOMAIN.	
CC		
CC	This SWISS-PROT entry is copyright. It is produced through a collaboration	
CC	between the Swiss Institute of Bioinformatics and the EMBL outstation -	
CC	the European Bioinformatics Institute. There are no restrictions on its	
CC	use by non-profit institutions as long as its content is in no way	
CC	modified and this statement is not removed. Usage by and for commercial	
CC	entities requires a license agreement (See <a href="http://www.isb-sib.ch/announce/">http://www.isb-sib.ch/announce/</a>	
CC	or send an email to <a href="mailto:license@isb-sib.ch">license@isb-sib.ch</a> ).	
CC	-----	
DR	EMBL; X93304; CAA63707.1; -.	
DR	InterPro; IPR003600; Ig_1like.	
DR	SMART; SM00410; Ig_1like; 1.	
KW	Immunoglobulin domain; T-cell; glycoprotein; signal; Transmembrane.	
FT	SIGNAL	1
FT	CHAIN	19
FT	DOMAIN	19
FT	TRANSHEM	152
FT	DOMAIN	179
FT	DOMAIN	219
FT	CARBOHYD	28
FT	CARBOHYD	37
FT	CARBOHYD	71
FT	CARBOHYD	84
FT	CARBOHYD	91
FT	CARBOHYD	104
FT	CARBOHYD	128
FT	CARBOHYD	128
FT	SEQUENCE	219 AA; 25143 MW; 85B5C650E9634AA CRC64;

Query Match	13.9%	Score 150.5;	DB 1	Length 221;
Best Local Similarity	23.8%	Pred. No. 1.4e-07;		
Matches	38;	Conservative	27;	Mismatches 70;
				Indels 25;
				Gaps 6

Query Match	13.0%;	Score 141;	DB 1;	Length 219;
Best Local Similarity	23.2%;	Pred. No. 1.2e-06;		
Matches	36;	Conservative	32;	Mismatches 71;
				Indels 16;
				Gaps 6;



GenCore version 4.5  
Copyright (c) 1993 - 2000 Compugen Ltd.

OM protein - protein search, using sw model

Run on: July 1, 2002, 16:48:37 ; Search time 26.62 Seconds

(without alignments)  
1293.238 Million cell updates/sec

Title: US-09-509-283b-2

Perfect score: 1082

Sequence: 1 MMSGLMWFFFLCLRIKIVLTG.....YMFMAVNTAKKSRLDVTLL 199

Scoring table: BIOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 562222 seqs, 172994929 residues

Maximum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :  
1: SP\_ARCHAEA:\*  
2: SP\_BACTERIA:\*  
3: SP\_FUNGI:\*  
4: SP\_HUMAN:\*  
5: SP\_INVERTEBRATE:\*  
6: SP\_MAMMAL:\*  
7: SP\_MHC:\*  
8: SP\_ORGANELLE:\*  
9: SP\_PHAGE:\*  
10: SP\_PLANT:\*  
11: SP\_PROTOZOA:\*  
12: SP\_VIRUS:\*  
13: SP\_VIRIDIA:\*  
14: SP\_UNCLASSIFIED:\*  
15: SP\_VIRUS:\*  
16: SP\_BACTERIAP:\*  
17: SP\_ARCHAEA:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	1082	100.0	199	4	Q9Y6W8
2	737.5	68.2	200	11	Q9WVS0
3	734	68.2	200	11	Q9JIL7
4	701	64.8	200	11	Q9RIT7
5	696	64.3	216	11	Q9WVR9
6	146.5	13.5	221	11	Q9ULV4
7	145.5	13.4	221	6	Q9N2I4
8	145.5	13.4	221	6	Q9N2I4
9	145.5	13.4	221	6	Q9N2I4
10	140.5	13.0	221	6	Q9GKP3
11	140.5	13.0	221	6	Q9N0N8
12	139.5	12.6	173	6	Q28289
13	136.5	12.6	220	6	Q9BDM8
14	135.5	12.5	220	6	Q9BDM5
15	130.5	12.1	220	6	Q9BDM6
16	125.5	11.6	220	6	Q9BDN8

17	115.5	10.7	220	6	Q9BDN2	Q9bdn2 callitrix
18	103.5	9.6	988	5	Q17710	Q17710 caenorhabdi
19	91.5	8.5	485	5	Q20139	Q20139 caenorhabdi
20	87	8.0	223	6	Q9BDP1	Q9bdp1 actus trivi
21	84.5	7.8	209	4	Q9NYK4	Q9nyk4 homo sapien
22	84.5	7.8	223	11	Q9QZ27	Q9qz27 mus musculu
23	84	7.8	223	4	Q96P43	Q96p43 homo sapien
24	84	7.8	285	17	Q28747	Q28747 archaeoglob
25	84	7.8	419	13	Q9IA91	Q9ia91 morone saxa
26	83.5	7.7	223	11	Q9JLV3	Q9jlv3 marmota mon
27	83	7.7	1239	10	Q9FHM1	Q9fhm1 araldopsis
28	82.5	7.6	223	11	Q62859	Q62859 rattus norv
29	82	7.6	223	6	Q9BDC4	Q9bdc4 macaca mula
30	82	7.6	223	6	Q9BDN7	Q9bdn7 papio anubi
31	81	7.5	276	12	Q98822	Q98822 human adeno
32	81	7.5	276	12	Q64861	Q64861 human adeno
33	81	7.5	680	11	Q55001	Q55001 mus musculu
34	80.5	7.4	247	16	Q99RX6	Q99rx6 staphylococ
35	80.5	7.4	635	11	Q55002	Q55002 mus musculu
36	80.5	7.4	663	11	Q70434	Q70434 mus musculu
37	79.5	7.3	269	4	Q95297	Q95297 homo sapien
38	79	7.3	370	4	Q9BZM8	Q9bzm8 homo sapien
39	78.5	7.3	310	11	Q9EQ87	Q9eq87 mus musculu
40	78	7.2	231	5	Q45668	Q45668 caenorhabdi
41	77.5	7.2	311	11	Q9EQ86	Q9eq86 mus musculu
42	77	7.1	323	6	Q9BDM2	Q9bdm2 cercopithec
43	77	7.1	338	5	Q22576	Q22576 caenorhabdi
44	77	7.1	539	12	P88842	P88842 avian infec
45	77	7.1	619	10	Q9XGCI	Q9xgci sorghum blic

## ALIGNMENTS

RESULT	ID	Q9Y6W8	PRELIMINARY:	PRT:	199 AA.
AC	Q9Y6W8	01-NOV-1999 (TREMUR12, Created)			
DT	Q9Y6W8	01-NOV-1999 (TREMUR12, Last sequence update)			
DT	Q9Y6W8	01-DEC-2001 (TREMUR12, Last annotation update)			
DE	Q9Y6W8	ACTIVATION-INDUCIBLE LYMPHOCYTE IMMUNOMEDIATOR MOLECULE AILIM			
DE	Q9Y6W8	PRECURSOR (INDUCIBLE T-CELL CO-STIMULATOR PRECURSOR) (INDUCIBLE			
DE	Q9Y6W8	COSTIMULATOR PRECURSOR)			
GN	Q9Y6W8	ICOS.			
OS	Q9Y6W8	Homo sapiens (Human).			
OC	Q9Y6W8	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Q9Y6W8	Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.			
OX	Q9Y6W8	NCBI_TaxID=9606;			
RN	Q9Y6W8	[1]			
RP	Q9Y6W8	SEQUENCE FROM N.A.			
RC	Q9Y6W8	TISSUE=BLOOD;			
RA	Q9Y6W8	Tezuka K., Tamatani T.;			
RT	Q9Y6W8	"Cell surface molecule mediating cell adhesion and signal			
RL	Q9Y6W8	transmission";			
RL	Q9Y6W8	submitted (Feb-1999) to the EMBL/GenBank/DBJ databases.			
RN	Q9Y6W8	[2]			
RP	Q9Y6W8	SEQUENCE FROM N.A.			
RX	Q9Y6W8	MEDLINE=99127892; PubMed=9930702;			
RA	Q9Y6W8	Hutloff A., Dittlich A.M., Beier K.C., Eljaschewitsch B., Kraft R.,			
RT	Q9Y6W8	Anagnostopoulos I., Kroczeck R.A.;			
RL	Q9Y6W8	ICOS is an inducible T-cell co-stimulator structurally and			
RL	Q9Y6W8	functionally related to CD28.";			
RL	Q9Y6W8	Nature 397:263-266(1999).			
RN	Q9Y6W8	[3]			
RP	Q9Y6W8	SEQUENCE FROM N.A.			
RA	Q9Y6W8	Beier K.C., Hutloff A., Dittlich A.M., Heuck C., Mages H.W.,			
RA	Q9Y6W8	Buecher K., Henn V., Rauch A., Kroczeck R.A.;			
RT	Q9Y6W8	"Detailed analysis of human ICOS and its ligand.";			
RL	Q9Y6W8	submitted (May-2000) to the EMBL/GenBank/DBJ databases.			
RN	Q9Y6W8	[4]			
RP	Q9Y6W8	SEQUENCE FROM N.A.			
RC	Q9Y6W8	TISSUE=THYMUS;			

RA MEDLINE=20243570;  
 RA Alcher A., Hayden-Ledbetter M., Brady W.A., Pezzutto A., Richter G.,  
 RA Magaletti D., Buckwalter S., Ledbetter J.A., Clark E.A.;  
 RT "Characterization of human inducible costimulator ligand expression  
 RT and function.";  
 RL J. Immunol. 164:4689-4696(2000).  
 DR EMBL: AB023135; BA082129.1; -;  
 DR EMBL: AJ27832; CAC06512.1; -;  
 DR EMBL: AF218312; AAF71301.1; -;  
 KW Signal.  
 FT SIGNAL.  
 SQ SEQUENCE 199 AA; 22624 MM; 214EC741C9BDC9FC CRC64;

Query Match 100.0%; Score 1082; DB 4; Length 199;  
 Best Local Similarity 100.0%; Pred. No. 2.8e-109;  
 Matches 199; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MKSLMFELFCLRIKVLTEINGSANYEMFIHNGVQILCKYPDIVQCFKMLKGGQ 60  
 1 MKSLMFELFCLRIKVLTEINGSANYEMFIHNGVQILCKYPDIVQCFKMLKGGQ 60  
 DB 61 ILCDLTKGSGNTVSTKSLKFSQSLSNNSVSFEVLNLDHSHANYFCNLTIFDPPPEK 120  
 QY 121 VTLGGYLHYESQLCCQLKFWLPICGAFVVCILGICILITLTKKRYSSVHDPPNGEY 180  
 121 VTLGGYLHYESQLCCQLKFWLPICGAFVVCILGICILITLTKKRYSSVHDPPNGEY 180  
 DB 121 VTLGGYLHYESQLCCQLKFWLPICGAFVVCILGICILITLTKKRYSSVHDPPNGEY 180  
 QY 181 MFMAVNTAKKSRLTDVTL 199  
 181 MFMAVNTAKKSRLTDVTL 199  
 DB 181 MFMAVNTAKKSRLTDVTL 199

RESULT 2  
 Q9WVSO PRELIMINARY; PRT; 200 AA.  
 ID Q9WVSO;  
 AC Q9WVSO;  
 DT 01-NOV-1999 (TREMBlrel. 12, Created)  
 DT 01-NOV-1999 (TREMBlrel. 12, Last sequence update)  
 DT 01-JUN-2001 (TREMBlrel. 17, Last annotation update)  
 DE ACTIVATION-INDUCIBLE LYMPHOCYTE IMMUNOMODULATOR MOLECULE ALLIM  
 DE PRECURSOR (CCLP PRECURSOR) (SURFACE PROTEIN).  
 GN CCLEP OR ICOS.  
 OS Mus musculus (Mouse).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
 NCBI\_TaxID=10090;  
 [1]  
 RP SEQUENCE FROM N.A.  
 RC TISSUE=SPLEEN;  
 RA Tezuka K., Tamatani T.;  
 RT "Cell surface molecule mediating cell adhesion and signal  
 RT transmission.";  
 RL Submitted (FEB-1999) to the EMBL/GenBank/DBJ databases.  
 RN [2]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=BALB/C; TISSUE=SPLEEN;  
 RA Wu D., Gannon M.A., Kiesecker C.L., Faas S.J., Mickle A.P.,  
 RA Matis L.A., Rother R.P.;  
 RT "CCLEP, A novel molecule that regulates T cell activation.";  
 RL Submitted (APR-2000) to the EMBL/GenBank/DBJ databases.  
 RN [3]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=BALB/C; TISSUE=SPLEEN;  
 RX MEDLINE=20225659; PubMed=10760791;  
 RA Mages H.W., Hutloff A., Heuck C., Buchner K., Himmelfauer H.,  
 RA Clivieri F., Kroccek R.A.;  
 RT "Molecular cloning and characterization of murine ICOS and  
 RT identification of B7h as ICOS ligand.";  
 RL Eur. J. Immunol. 30:1040-1047(2000).  
 DR EMBL: AB023132; BA082126.1; -;

DR EMBL: AF257230; AAF70099.1; -;  
 DR EMBL: AJ250559; CAB71153.1; -;  
 DR MGD; MGI:1858745; Icos.  
 KW Signal.  
 FT SIGNAL.  
 SQ SEQUENCE 1 20 POTENTIAL.  
 9B2278EACABIDB47 CRC64;

Query Match 68.2%; Score 737.5; DB 11; Length 200;  
 Best Local Similarity 69.3%; Pred. No. 6e-72;  
 Matches 138; Conservative 20; Mismatches 40; Indels 1; Gaps 1;

QY 1 MKSLMFELFCLRIKVLTEINGSANYEMFIHNGVQILCKYPDIVQCFKMLKGGQ 60  
 1 MKSLMFELFCLRIKVLTEINGSADHRMFSFHNGVQILCKYPDIVQCFKMLKGGQ 60  
 DB 61 ILCDLTKGSGNTVSTKSLKFSQSLSNNSVSFEVLNLDHSHANYFCNLTIFDPPPEK 120  
 QY 61 ILCDLTKGSGNTVSTKSLKFSQSLSNNSVSFEVLNLDHSHANYFCNLTIFDPPPEK 120  
 DB 61 VTLGGYLHYESQLCCQLKFWLPICGAFVVCILGICILITLTKKRYSSVHDPPNGEY 179  
 QY 121 VTLGGYLHYESQLCCQLKFWLPICGAFVVCILGICILITLTKKRYSSVHDPPNGEY 179  
 121 VTLGGYLHYESQLCCQLKFWLPICGAFVVCILGICILITLTKKRYSSVHDPPNGEY 179  
 DB 121 ERNLSCGYLHYESQLCCQLKFWLPICGAFVVCILGICILITLTKKRYSSVHDPPNGEY 180  
 QY 180 YMFMAVNTAKKSRLTDVTL 198  
 180 YMFMAVNTAKKSRLTDVTL 198  
 DB 181 YMFMAVNTAKKSRLTDVTL 199

RESULT 3  
 Q9JL17 PRELIMINARY; PRT; 200 AA.  
 ID Q9JL17;  
 AC Q9JL17;  
 DT 01-OCT-2000 (TREMBlrel. 15, Created)  
 DT 01-OCT-2000 (TREMBlrel. 15, Last sequence update)  
 DT 01-MAR-2001 (TREMBlrel. 16, Last annotation update)  
 DE CD28-RELATED PROTEIN 1 (INDUCIBLE COSTIMULATOR PROTEIN)  
 DE (FRAGMENT).  
 GN ICOS.  
 OS Mus musculus (Mouse).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
 NCBI\_TaxID=10090;  
 [1]  
 RP SEQUENCE FROM N.A.  
 RC TISSUE=INTESPRINAL; INTRA-EPITHELIUM;  
 RA Yoshinaga S.K., Whoriskey J.S., Khare S.D., Sarmiento U., Guo J.,  
 RA Horan T., Shin G., Zhang M., Coccia M.A., Kohno T., Tafiri-Bladt A.,  
 RA Campbell P., Chang D., Chiu L., Dai T., Duncan G., Elliott G.S.,  
 RA Hui A., McCabe S.M., Scully S., Shaklee C.L., Van G., Mak T.W.,  
 RA Senaldi G.;  
 RT "T-cell co-stimulation through B7RP-1 and ICOS.";  
 RL Nature 0:0-0(2000).  
 RN [2]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=129/OLA;  
 RA McAdam A.J., Greenwald R.J., Levin M.A., Chernova T., Malenkovich N.,  
 RA Ling V., Freeman G.J., Sharpe A.H.;  
 RT "The inducible costimulator (ICOS) molecule is critical for CD40-  
 RT mediated antibody class switching.";  
 RL Submitted (DEC-2000) to the EMBL/GenBank/DBJ databases.  
 DR EMBL: AF216748; AAF45150.1; -;  
 DR EMBL: AF327185; AAF48732.1; -;  
 DR EMBL: AF327184; AAG48732.1; JOINED.  
 FT NON TER 200  
 SQ SEQUENCE 200 AA; 22709 MM; 87D97FDDC44ADC47 CRC64;

Query Match 67.8%; Score 734; DB 11; Length 200;  
 Best Local Similarity 70.4%; Pred. No. 1.4e-71;  
 Matches 138; Conservative 19; Mismatches 35; Indels 4; Gaps 2;

QY 7 YF---FLFCLRIKVLTEINGSANYEMFIHNGVQILCKYPDIVQCFKMLKGGQILC 63



QY 74 TVSIKSLKF-----CHSOLSNNSVFFLYNLDSHANYFCNLSTFDPPPF--KVTLT 124  
ID 09N214 PRELIMINARY; PRT; 221 AA.  
AC 09N214  
DT 01-OCT-2000 (Tremblrel. 15, Created)  
DT 01-OCT-2001 (Tremblrel. 15, Last sequence update)  
DT 01-JUN-2001 (Tremblrel. 17, Last annotation update)  
CD28.  
OS Felis silvestris catus (Cat).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.  
OX NCBI\_TaxID=9685;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE:20094001; PubMed:10630305;  
RA Nishimura Y., Miyazawa T., Ikeda Y., Izumiya Y., Nakamura K., Sato E.,  
RA Mikami T., Takahashi E.; and sequencing of a cDNA encoding the feline T-cell  
RT antigen CD28 homologue."  
RL Immunogenetics 50:369-370(1999).  
DR EMBL: AB025316; BAA92349.1; -.  
DR InterPro: IPR003600; Ig\_Like.  
DR SMART: SM00410; Ig\_Like.1.  
SQ SEQUENCE 221 AA; 25283 MW; B17B76C52BA18DCB CRC64;

Query Match 13.4%; Score 145.5; DB 6; Length 221;  
Best Local Similarity 28.3%; Pred. No. 9.8e-08;  
Matches 45; Conservative 22; Mismatches 65; Indels 27; Gaps 8;

QY 32 IFHNGVOILCKYPD--IVQFKMQLKGGQILCDLTKTKG--SGNTVSIKSLKF-CHSQ 86  
ID 002757 PRELIMINARY; PRT; 221 AA.  
AC 002757  
DT 01-JUL-1997 (Tremblrel. 04, Created)  
DT 01-JUL-1997 (Tremblrel. 04, Last sequence update)  
DT 01-DEC-2001 (Tremblrel. 19, Last annotation update)  
DE T-CELL SPECIFIC SURFACE GLYCOPROTEIN CD28.  
OS Felis silvestris catus (Cat).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.  
OX NCBI\_TaxID=9685;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX Hash S.M., Carpio M.R., Collisson E.W.;  
RA "Felis catus T-cell specific surface glycoprotein CD28."  
DT 01-MAR-2001 (Tremblrel. 16, Last sequence update)

QY 125 GGYHITESQLCCOL-----KFW-LPIGCAAFVVCILCCLICLWLTKKYSSVHPD 176  
ID 131 GTVIHVENNICPGSPSPPEPKPFWTLVFSGLVGLYSLLSTMLCYLMTKROFRL--L 188  
DT 177 NGEXMFM 183  
DB 189 QSDYMM 195

RESULT 7  
ID 09N214 PRELIMINARY; PRT; 221 AA.  
AC 09N214  
DT 01-OCT-2000 (Tremblrel. 15, Created)  
DT 01-OCT-2001 (Tremblrel. 15, Last sequence update)  
DT 01-JUN-2001 (Tremblrel. 17, Last annotation update)  
CD28.  
OS Felis silvestris catus (Cat).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.  
OX NCBI\_TaxID=9685;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE:20094001; PubMed:10630305;  
RA Nishimura Y., Miyazawa T., Ikeda Y., Izumiya Y., Nakamura K., Sato E.,  
RA Mikami T., Takahashi E.; and sequencing of a cDNA encoding the feline T-cell  
RT antigen CD28 homologue."  
RL Immunogenetics 50:369-370(1999).  
DR EMBL: AB025316; BAA92349.1; -.  
DR InterPro: IPR003600; Ig\_Like.  
DR SMART: SM00410; Ig\_Like.1.  
SQ SEQUENCE 221 AA; 25283 MW; B17B76C52BA18DCB CRC64;

RL Thesis (1996), Veterinary Pathobiology, Texas A&M Univ.  
DR EMBL: U57754; AAB53574.1; -.  
DR InterPro: IPR003600; Ig\_Like.  
DR SMART: SM00410; Ig\_Like.1.  
SQ SEQUENCE 221 AA; 25317 MW; 5B71717E461AE5E3 CRC64;

Query Match 13.4%; Score 145.5; DB 6; Length 221;  
Best Local Similarity 28.3%; Pred. No. 9.8e-08;  
Matches 45; Conservative 22; Mismatches 65; Indels 27; Gaps 8;

QY 32 IFHNGVOILCKYPD--IVQFKMQLKGGQILCDLTKTKG--SGNTVSIKSLKF-CHSQ 86  
ID 097630 PRELIMINARY; PRT; 219 AA.  
AC 097630  
DT 01-MAY-1999 (Tremblrel. 10, Created)  
DT 01-MAY-1999 (Tremblrel. 10, Last sequence update)  
DT 01-DEC-2001 (Tremblrel. 19, Last annotation update)  
DE T-CELL SPECIFIC SURFACE GLYCOPROTEIN CD28.  
GN CD28.  
OS Ovis aries (Sheep).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;  
OC Bovidae; Caprinae; Ovis.  
OX NCBI\_TaxID=9940;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE:99309828; PubMed:10380709;  
RA Chaplin P.J., Pietrala L.N., Scheerlinck J.P.;  
RT "Cloning and sequence comparison of sheep CD28 and CTLA-4."  
RL Immunogenetics 49:583-584(1999).  
DR EMBL: AF092739; AAD04379.1; -.  
DR InterPro: IPR003600; Ig\_Like.  
DR SMART: SM00410; Ig\_Like.1.  
SQ SEQUENCE 219 AA; 25158 MW; D50AD339E5BC2327 CRC64;

Query Match 13.4%; Score 145; DB 6; Length 219;  
Best Local Similarity 23.5%; Pred. No. 1.1e-07;  
Matches 40; Conservative 35; Mismatches 75; Indels 20; Gaps 8;

QY 30 MFIHNGVOILCKYPD--IVQFKMQLKGGQILCDLTKTKG--GNTVSIKSLKF-CHS 85  
ID 28 MLVNDNEVNLSCRYTNLFESKEFRASLYKGADSAVECAVNGNSHPLOSTNKEFNCTV 87  
DB 86 QLSNNSVFFLYNLDSHANYFCNLSTFDPPPF--KVTLTGGYLIHYESQLC----- 136  
DT 88 KVGNETYTFYLODLVNOTDIFYCKLEVLVPPPIIDNEKSNGTIITHKEKHLCPQLSPES 147  
QY 137 QCLKFWLPI--GCAAFVVCILCCLICLWLTKKYSSVHPDNGEXMFM 183  
ID 148 SSKFMAVLVYVGLVFSLLVATLCAVLCQWKKSR--NRMH--QSDYMM 193  
DT 01-MAR-2001 (Tremblrel. 16, Last sequence update)

RESULT 10  
ID 09GKP3 PRELIMINARY; PRT; 221 AA.  
AC 09GKP3  
DT 01-MAR-2001 (Tremblrel. 16, Created)  
DT 01-MAR-2001 (Tremblrel. 16, Last sequence update)

GenCore version 4.5  
Copyright (c) 1993 - 2000 Compugen Ltd.

OM protein - protein search, using sw model

Run on: July 1, 2002, 16:47:37 ; Search time 13.12 Seconds

(without alignments)  
370,480 Million cell updates/sec

Title: US-09-509-283B-2

Perfect score: 1082

Sequence: 1 MMSGIMWFPLFCRLIRVLTG.....YMFRAVNTAKSRLTDVTL 199

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 231628 seqs, 24425594 residues

Maximum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Issued\_Patents\_AA.\*  
1: /cgn2\_6/ptodata/2/1aa/5A.COMB.pep.\*  
2: /cgn2\_6/ptodata/2/1aa/5B.COMB.pep.\*  
3: /cgn2\_6/ptodata/2/1aa/6A.COMB.pep.\*  
4: /cgn2\_6/ptodata/2/1aa/6B.COMB.pep.\*  
5: /cgn2\_6/ptodata/2/1aa/PCrUS.COMB.pep.\*  
6: /cgn2\_6/ptodata/2/1aa/backfiles1.pep.\*

Pred. No. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being printed,  
and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	163	15.1	218	3	US-08-228-208A-20
2	146.5	13.5	225	1	US-08-505-058-4
3	146.5	13.5	225	2	US-08-459-818-24
4	146.5	13.5	225	2	US-08-889-666-24
5	146.5	13.5	225	2	US-08-465-078-24
6	146.5	13.5	225	2	US-08-725-776-24
7	146.5	13.5	225	2	US-08-488-062-24
8	140	12.9	218	3	US-08-228-208A-19
9	134.5	12.4	220	3	US-08-228-208A-21
10	134	12.4	225	1	US-08-505-058-3
11	134	12.4	225	2	US-08-459-818-23
12	134	12.4	225	2	US-08-889-666-23
13	134	12.4	225	2	US-08-465-078-23
14	134	12.4	225	2	US-08-725-776-23
15	134	12.4	225	2	US-08-488-062-23
16	126	11.6	223	1	US-08-505-058-5
17	126	11.6	223	2	US-08-459-818-25
18	126	11.6	223	2	US-08-889-666-25
19	126	11.6	223	2	US-08-465-078-25
20	126	11.6	223	2	US-08-725-776-25
21	126	11.6	223	2	US-08-488-062-25
22	120.5	11.1	367	3	US-08-630-172-19
23	120.5	11.1	367	4	US-09-375-419-19
24	119.5	11.0	134	3	US-08-630-172-3
25	119.5	11.0	134	4	US-09-375-419-3
26	110.5	10.2	110	4	US-09-460-384-33
27	93	8.6	221	3	US-08-228-208A-22

28	89.5	8.3	117	2	US-08-529-878B-39	Sequence 39, Appl
29	87	8.0	330	2	US-08-332-562A-81	Sequence 81, Appl
30	87	8.0	330	2	US-08-332-562A-134	Sequence 134, Appl
31	86.5	8.0	209	4	US-09-430-503-20	Sequence 20, Appl
32	84.5	7.8	209	4	US-09-430-503-18	Sequence 18, Appl
33	84.5	7.8	209	4	US-09-430-503-24	Sequence 24, Appl
34	84	7.8	223	3	US-08-228-208A-17	Sequence 17, Appl
35	84	7.8	283	3	US-08-332-562A-136	Sequence 136, Appl
36	82.5	7.6	209	4	US-09-430-503-22	Sequence 22, Appl
37	81.5	7.5	187	1	US-08-067-684-14	Sequence 14, Appl
38	81.5	7.5	187	1	US-08-008-898-14	Sequence 14, Appl
39	81.5	7.5	187	2	US-08-459-818-14	Sequence 14, Appl
40	81.5	7.5	187	2	US-08-889-666-14	Sequence 14, Appl
41	81.5	7.5	187	2	US-08-465-078-14	Sequence 14, Appl
42	81.5	7.5	187	2	US-08-725-776-14	Sequence 14, Appl
43	81.5	7.5	187	2	US-08-488-062-14	Sequence 14, Appl
44	81.5	7.5	187	3	US-08-228-208A-14	Sequence 14, Appl
45	81.5	7.5	187	5	PCT-US95-06726-36	Sequence 36, Appl

#### ALIGNMENTS

RESULT 1  
US-08-228-208A-20  
Sequence 20, Application US/08228208A  
Patent No. 6090914  
GENERAL INFORMATION:  
APPLICANT: Linsley, Peter S.  
APPLICANT: Ledbetter, Jeffrey A.  
APPLICANT: Dame, Nalin K.  
APPLICANT: Brady, William  
APPLICANT: Wallace, Philip M.  
TITLE OF INVENTION: CTLA4/CD28 HYBRID FUSION  
TITLE OF INVENTION: PROTEINS AND USES THEREOF  
NUMBER OF SEQUENCES: 22  
CORRESPONDENCE ADDRESSES:  
ADDRESSEE: Merchant & Gould  
STREET: 1150 Santa Monica Boulevard, Suite 400  
CITY: Los Angeles  
STATE: CA  
COUNTRY: USA  
ZIP: 90025  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Diskette  
COMPUTER: IBM Compatible  
OPERATING SYSTEM: DOS  
SOFTWARE: FASTSEQ Version 2.0  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/228, 208A  
FILING DATE: 15-APR-1994  
CLASSIFICATION: 435  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: 08/008, 898  
FILING DATE: 22-JAN-1993  
APPLICATION NUMBER: 07/723, 617  
FILING DATE: 27-JUN-1991  
ATTORNEY/AGENT INFORMATION:  
NAME: Adriano, Sarah B  
REGISTRATION NUMBER: 34,470  
REFERENCE/DOCKET NUMBER: 30436-30US01  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 310 445-1140  
TELEFAX: 310 445-9031  
TELEX:  
INFORMATION FOR SEQ ID NO: 20:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 218 amino acids  
TYPE: amino acid  
STRANDEDNESS: unknown  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
US-08-228-208A-20

	Query Match	15.1%	Score 163;	DB 3;	Length 218;	
	Local Similarity	26.5%;	Pred. No. 3e-11;			
	Matches	41;	Conservative	31;	Mismatches	65;
					Indels	18;
					Gaps	7;
QY	30 MEIFHNGVAILCKYPD--IVQAFKMLIKGQILCDLTKTGSGNTVSINKLK-----F	82				
	: : : : : : : : : : : : : : : : : :					
Db	29 LLVYDNNNEVSELCRRSYNLAKREFASLYKG--VMSDYEVCGNNGNFYQPQFRPNVGFN	86				
	: : : : : : : : : : : : : : : : : :					
QY	83 CHSOLSNNSVSFFFLNLDHSANITYFCNLSIDPPPF--KVTLTGGYLHIYSQLC--C	137				
	: : : : : : : : : : : : : : : : : :					
Dd	87 CDGNPDNETVFETRLNLLVNPHFDIEFKCEIEMVPPPYLDNEKSNGSTIIHKIKHLCHAQT	146				
	: : : : : : : : : : : : : : : : : :					
QY	138 QUKFWLPIGCAAFVVVC--ILGCILIC--WLTKKK	168				
	: : : : : : : : : : : : : : : : : :					
Db	147 SPKLFWPLVVYVAGVILCYGLTYTVLTCLIIIMTSRK	181				
	: : : : : : : : : : : : : : : : : :					

1  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 35  
 36  
 37  
 38  
 39  
 40  
 41  
 42  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50  
 51  
 52  
 53  
 54  
 55  
 56  
 57  
 58  
 59  
 60  
 61  
 62  
 63  
 64  
 65  
 66  
 67  
 68  
 69  
 70  
 71  
 72  
 73  
 74  
 75  
 76  
 77  
 78  
 79  
 80  
 81  
 82  
 83  
 84  
 85  
 86  
 87  
 88  
 89  
 90  
 91  
 92  
 93  
 94  
 95  
 96  
 97  
 98  
 99  
 100  
 101  
 102  
 103  
 104  
 105  
 106  
 107  
 108  
 109  
 110  
 111  
 112  
 113  
 114  
 115  
 116  
 117  
 118  
 119  
 120  
 121  
 122  
 123  
 124  
 125  
 126  
 127  
 128  
 129  
 130  
 131  
 132  
 133  
 134  
 135  
 136  
 137  
 138  
 139  
 140  
 141  
 142  
 143  
 144  
 145  
 146  
 147  
 148  
 149  
 150  
 151  
 152  
 153  
 154  
 155  
 156  
 157  
 158  
 159  
 160  
 161  
 162  
 163  
 164  
 165  
 166  
 167  
 168  
 169  
 170  
 171  
 172  
 173  
 174  
 175  
 176  
 177  
 178  
 179  
 180  
 181  
 182  
 183  
 184  
 185  
 186  
 187  
 188  
 189  
 190  
 191  
 192  
 193  
 194  
 195  
 196  
 197  
 198  
 199  
 200  
 201  
 202  
 203  
 204  
 205  
 206  
 207  
 208  
 209  
 210  
 211  
 212  
 213  
 214  
 215  
 216  
 217  
 218  
 219  
 220  
 221  
 222  
 223  
 224  
 225  
 226  
 227  
 228  
 229  
 230  
 231  
 232  
 233  
 234  
 235  
 236  
 237  
 238  
 239  
 240  
 241  
 242  
 243  
 244  
 245  
 246  
 247  
 248  
 249  
 250  
 251  
 252  
 253  
 254  
 255  
 256  
 257  
 258  
 259  
 260  
 261  
 262  
 263  
 264  
 265  
 266  
 267  
 268  
 269  
 270  
 271  
 272  
 273  
 274  
 275  
 276  
 277  
 278  
 279  
 280  
 281  
 282  
 283  
 284  
 285  
 286  
 287  
 288  
 289  
 290  
 291  
 292  
 293  
 294  
 295  
 296  
 297  
 298  
 299  
 300  
 301  
 302  
 303  
 304  
 305  
 306  
 307  
 308  
 309  
 310  
 311  
 312  
 313  
 314  
 315  
 316  
 317  
 318  
 319  
 320  
 321  
 322  
 323  
 324  
 325  
 326  
 327  
 328  
 329  
 330  
 331  
 332  
 333  
 334  
 335  
 336  
 337  
 338  
 339  
 340  
 341  
 342  
 343  
 344  
 345  
 346  
 347  
 348  
 349  
 350  
 351  
 352  
 353  
 354  
 355  
 356  
 357  
 358  
 359  
 360  
 361  
 362  
 363  
 364  
 365  
 366  
 367  
 368  
 369  
 370  
 371  
 372  
 373  
 374  
 375  
 376  
 377  
 378  
 379  
 380  
 381  
 382  
 383  
 384  
 385  
 386  
 387  
 388  
 389  
 390  
 391  
 392  
 393  
 394  
 395  
 396  
 397  
 398  
 399  
 400  
 401  
 402  
 403  
 404  
 405  
 406  
 407  
 408  
 409  
 410  
 411  
 412  
 413  
 414  
 415  
 416  
 417  
 418  
 419  
 420  
 421  
 422  
 423  
 424  
 425  
 426  
 427  
 428  
 429  
 430  
 431  
 432  
 433  
 434  
 435  
 436  
 437  
 438  
 439  
 440  
 441  
 442  
 443  
 444  
 445  
 446  
 447  
 448  
 449  
 450  
 451  
 452  
 453  
 454  
 455  
 456  
 457  
 458  
 459  
 460  
 461  
 462  
 463  
 464  
 465  
 466  
 467  
 468  
 469  
 470  
 471  
 472  
 473  
 474  
 475  
 476  
 477  
 478  
 479  
 480  
 481  
 482  
 483  
 484  
 485  
 486  
 487  
 488  
 489  
 490  
 491  
 492  
 493  
 494  
 495  
 496  
 497  
 498  
 499  
 500  
 501  
 502  
 503  
 504  
 505  
 506  
 507  
 508  
 509  
 510  
 511  
 512  
 513  
 514  
 515  
 516  
 517  
 518  
 519  
 520  
 521  
 522  
 523  
 524  
 525

Query Match	13.5%	Score 146.5	DB 1	Length 225
Best Local Similarity	26.2%	Pred. No. 2.7	E=09	
Matches 42	Conservative 31	Mismatches 64	Indels 23	Gaps 9

  

QY	59	MEPIINGVQVL-CRYPD--IVQQRMLKKGGLICDLITKT-KSGNGTVSKSLK----	81
DB	30	LVVNNNEVXSLSCRSITNLLAKERRASLYTK--VNSDVKXECVGNNGNTYQPPRPNGV	87

```

Oy      82 -FCHSOLNNSVSSEFLYLIDSHANFYECNLSIDPPEF--KVLITGGYLHIESQLC-- 136
      | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
Db      88 FNCDSGNEFNEIVFRLMLDVAHNRHDIYFCRLEVWYPPYLIDNEKSNSTIIRIKRHCHA 147
Oy      137 ----CQLKMLPIGCAAFVNYC--ILGCIIC--WLRKK 168
      | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
Db      148 XXXQTSFKLFWPLVYVAGVLTGILTYLTATLCTIWTNSRK 187

```

```

RESULT 3
US-08-459-818-24
Sequence 24, Application US/08459818
Patent No. 5851795
GENERAL INFORMATION:
APPLICANT: Linsley, Peter S.
APPLICANT: Ledbetter, Jeffrey A.
APPLICANT: Damle, Nitin K.
APPLICANT: Brady, William
TITLE OF INVENTION: CTLA4 Receptor and Uses Thereof
NUMBER OF SEQUENCES: 27
CORRESPONDENCE ADDRESS:
ADDRESSEE: Merchant & Gould
STREET: 11150 Santa Monica Blvd., Suite 400
CITY: Los Angeles
STATE: California
COUNTRY: USA
ZIP: 90025
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Fastseq 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/459,818
FILING DATE: 02-JUN-1995
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Adriano, Sarah B.
REGISTRATION NUMBER: 34,470
REFERENCE/DOCKET NUMBER: 30436.35US02
TELECOMMUNICATION INFORMATION:
TELEPHONE: 310-445-1140
TELEFAX: 310-445-9031
INFORMATION FOR SEQ ID NO: 24:
SEQUENCE CHARACTERISTICS:
LENGTH: 225 amino acids
TYPE: amino acid
STRANDEDNESS:
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-459-818-24

```

[illegible]

RESULT 4  
US-08-889-666-24  
; Sequence 24, Application US/08889666